City and County of Honolulu

2010 Wastewater Consent Decree

Civil No. 94-00765 DAE-KSC

Annual Report

Year Nine

(July 1, 2018 – June 30, 2019)

Prepared By: The Department of Environmental Services

Submitted: September 30, 2019

Contents

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Acronyms and Abbreviations

Acronym or Abbreviation	Description
ACP	Asbestos Cement Pipe
ARV	Air Release Valve
BWS	Board of Water Supply
CA	Condition Assessment
CCH	City & County of Honolulu
CCP	Concrete Cylinder Pipe
CCTV	Closed-Circuit Television
CD	Consent Decree, Civil No. 94-00765 DAE-KSC
CIP	Capital Improvement Program
CIP	Cast Iron Pipe
CIPP	Cured In Place Piping
CMMS	Computerized Maintenance Management System
COR	Corporation Counsel – CCH
CSM	Division of Collection System Maintenance
CWA	Clean Water Act
DDC	Department of Design and Construction
DFM	Department of Facility Maintenance
DIP	Ductile Iron Pipe
DOH	State of Hawaii Department of Health
DOT	State of Hawaii Department of Transportation
DPP	Department of Planning and Permitting
ENV	Department of Environmental Services
EPA	United States Environmental Protection Agency
EPS	Effluent Pump Station
EQ	Department of Environmental Services, Division of Environmental Quality
FCA	Flange Coupling Adaptor
FM	Force Main
FOG	Fats, Oils and Grease

Acronym or Abbreviation	Description
FSE	Food Service Establishment
FTE	Full-Time Equivalent
GCD	Global Consent Decree, Civil No. 94-00765 DAE-KSC
GI	Grease Interceptor
GIS	Geographic Information Systems
GM	Gravity Main
GRD	Grease Removal Device
HDPE	High Density Polyethylene
I/I	Infiltration and Inflow
IDIQ	Indefinite Delivery, Indefinite Quantity
IPS	Influent Pump Station
LOW	Letter of Warning
M&C	Department of Environmental Services, Division of Environmental Quality, Monitoring and Compliance Branch
MG	Million Gallons
MGD	Million Gallons per Day
MH	Man Hole
N/A	Not applicable
NASSCO	National Association of Sewer Service Companies
NOV	Notice of Violation
NTP	Notice to Proceed
O&M	Operation and Maintenance
PACP	Pipeline Assessment and Certification Program
PM	Preventative Maintenance
PMH	Pressure Man Hole
POTW	Publicly Owned Treatment Works
PS	Pump Station
PTF	Preliminary Treatment Facility
PVC	Polyvinyl Chloride

Acronym or Abbreviation	Description
R&R	Rehabilitation and Replacement
RC	Department of Environmental Services, Division of Environmental Quality, Regulatory Control Branch
RCP	Reinforced Concrete Pipe
Rehab	Rehabilitation
ROW	Right-of-Way
SCADA	Supervisory Control and Data Acquisition
SCP	Spill Contingency Plan
SMH	Sewer Man Hole
SOP	Standard Operating Procedure
SSO	Sanitary Sewer Overflow
STL	Steel
T&D	Treatment & Disposal – CCH
TBD	To Be Determined
TDH	Total Dynamic Head
UT	Ultrasonic Testing
WDV	Waste Discharge Violation
WEC	Wastewater Engineering and Construction
WTD	Division of Wastewater Treatment and Disposal
WWPS	Wastewater Pump Station
WWTP	Wastewater Treatment Plant

Introduction

On December 17, 2010 the Consent Decree, subsequently amended, was entered among the City and County of Honolulu, the United States Environmental Protection Agency, and the Hawaii Department of Health and several non-governmental organizations. The consent decree outlines a program of improvements to the wastewater collection and treatment systems owned by the City and County of Honolulu on the island of Oahu.

The City and County of Honolulu (CCH) has prepared this Annual Report pursuant to Paragraph 34 of the First Amended Consent Decree (CD) to describe the progress achieved in implementing these improvements. Paragraphs 34.c and 34.d of the CD describe the information that is to be included in the Annual Report. This Annual Report summarizes CCH's progress during Year Nine of the CD ending on June 30, 2019.

This Annual Report is available on ENV's web site.

Annual Report Structure

The content and structure of the Annual Report are based on the requirements set forth in Paragraphs 11 through 33 of the CD. The Annual Report's sections appear in alphabetical order ("A" through "V") and correspond to Paragraphs 11 through 33; however, Paragraph 21 of the CD addresses the modification of construction deadlines, and since there are no modifications to report, this paragraph is not included in the Annual Report.

The CD identifies several types of requirements, including

Compliance milestones
Interim compliance milestones
Performance requirements
Annual performance requirements
Other CD due dates.

Projects that were previously under the oversight of the Department of Design and Construction (DDC) are now under the oversight of the Department of Environmental Services, Division of Wastewater Engineering and Construction (WEC).

A. Force Main Spill Contingency Program (Paragraph 11)

Small Force Main Tankering (Paragraph 11.a)

CCH has maintained no less than 1.6 million gallons per day (mgd) tankering capacity in good working order at all times. In the event a CCH vehicle is unavailable for any reason, CCH maintains a list of contractors available to provide tankering capacity. In Year Nine, CCH did not utilize any contractors to provide tankering capacity.

Large Force Mains (Paragraph 11.b)

Flow Diversion Equipment (Paragraph 11.b.ii)

Table 1. Flow Diversion Equipment Requirements

Requirement	Due Date	Status
Awa Street Force Main Flow Diversion Equipment	12/17/2012	Overflow diverts to Hart St. pump station.
Fort DeRussy Force Main Flow Diversion Equipment	12/17/2012	Overflow diverts to Beachwalk pump station.
Kaneohe Bay Force Main No. 1 Flow Diversion Equipment	12/17/2012	Flow diversion equipment in place.
Kunia Force Main Flow Diversion Equipment	12/17/2012	Flow diversion equipment in place.

Flow Diversion Planning (Paragraph 11.b.iii)

Table 2. Flow Diversion Planning Requirements

Requirement	Due Date	Status
Kamehameha Highway Force Main Flow Diversion Plan	12/17/2011	CCH submitted the Kamehameha Highway Force Main Flow Diversion Plan on 12/16/2011. EPA and DOH approved the Plan on 1/30/2012.
Ewa Beach Force Main Flow Diversion Plan	12/31/2014	CCH submitted the Ewa Beach Force Main Flow Diversion Plan on 12/31/2014. EPA and DOH conditionally approved the plan with comments on 1/22/2016. CCH addressed the comments on 3/15/2016.
Halawa Force Main Flow Diversion Plan	12/31/2014	CCH submitted the Halawa Force Main Flow Diversion Plan on 12/31/2014. EPA and DOH conditionally approved the plan with comments on 5/5/2015. CCH addressed the comments, revised the document and submitted the "Final" report on 7/6/2015.
Waimalu Force Main Flow Diversion Plan	12/31/2015	CCH submitted the Waimalu Force Main Flow Diversion Plan on 5/16/2013. Submitted revised construction schedule on 10/21/2013. EPA and DOH approved the Plan and revised construction schedule on 12/20/2013.

Table 3. Flow Diversion Construction Requirements

Requirement	Compliance Milestone	Status
Kamehameha Highway Force Main Rehabilitation - Slip lining	Design NTP: 07/01/2017; Construction NTP: 12/31/2018; Complete Construction: 06/30/2020	Design NTP issued 5/18/2017. Design completed. Construction bid opened on 6/7/2018. Construction NTP issued on 10/01/2018. Construction in Progress

Lualualei Force Main (Paragraph 11.b.iv)

Table 4. Lualualei Force Main Requirements

Requirement	Compliance Milestone	DDC Serial Number	Status
Lualualei Parallel Dry Force Main Construction	Complete Construction: 12/31/2013	08-0100	Construction completed on 11/29/2013.

Spill Contingency Planning (Paragraph 11.c)

Small Force Main Spill Contingency Planning (Paragraph 11.c.i)

Table 5. Small Force Main Spill Contingency Planning Requirements

Requirement	Due Date	Status
Small Force Main Spill Contingency Plan - Programmatic	12/17/2011	CCH submitted the Small Force Main Flow Contingency Plan - Programmatic on 12/16/2011. EPA and DOH approved the Plan on 1/30/2012. Plans, modified for site specific conditions, are maintained at each Pump Station.

Large Force Main Spill Contingency Planning (Paragraph 11.c.ii)

Table 6. Large Force Main Spill Contingency Planning Requirements

Requirement	Due Date	Status
Ewa Beach Force Main Spill Contingency Plan	12/17/2011	CCH submitted the Force Main Spill Contingency Plan on 12/16/2011. EPA and DOH approved the Plan on 1/30/2012. Copy of Plan is maintained at Pump Station.
Halawa Force Main Spill Contingency Plan	12/17/2011	CCH submitted the Force Main Spill Contingency Plan on 12/16/2011. EPA and DOH approved the Plan on 1/30/2012. Copy of Plan is maintained at Pump Station.
Kamehameha Highway Force Main Spill Contingency Plan	12/17/2011	CCH submitted the Force Main Spill Contingency Plan on 12/16/2011. EPA and DOH approved the Plan on 1/30/2012. Copy of Plan is maintained at Pump Station.

Requirement	Due Date	Status
Lualualei Force Main Spill Contingency Plan	12/17/2011	CCH submitted the Force Main Spill Contingency Plan on 12/16/2011. EPA and DOH approved the Plan on 1/30/2012. Copy of Plan is maintained at Pump Station.
Kailua Heights Force Main Spill Contingency Plan	6/17/2012	CCH submitted the Force Main Spill Contingency Plan on 6/17/2012. EPA and DOH approved the Plan on 1/9/2013. Copy of Plan is maintained at Pump Station.
Kailua Road Force Main Spill Contingency Plan	6/17/2012	CCH submitted the Force Main Spill Contingency Plan on 6/17/2012. EPA and DOH approved the Plan on 1/9/2013. Copy of Plan is maintained at Pump Station.
Ahuimanu Force Main Spill Contingency Plan	12/17/2012	CCH submitted the Force Main Spill Contingency Plan on 12/7/2012. EPA and DOH approved the Plan on 1/9/2013. Copy of Plan is maintained at Pump Station.
Niu Valley Force Main Spill Contingency Plan	12/17/2012	CCH submitted the Force Main Spill Contingency Plan on 12/7/2012. EPA and DOH approved the Plan on 1/9/2013. Copy of Plan is maintained at Pump Station.

Spill Contingency Plans Required by 2007 Stipulated Order (Paragraph 11.c.iii)

Table 7. Spill Contingency Plans Required by 2007 Stipulated Order

Requirement	Due Date	Status
Ala Moana Force Main No. 2 Spill Contingency Plan	N/A	CCH submitted a revised Force Main Spill Contingency Plan on 8/31/2011. EPA and DOH approved the Plan on 1/30/2012. Copy of Plan is maintained at Pump Station.

Requirement	Due Date	Status
Beachwalk Force Main Spill Contingency Plan	N/A	CCH submitted a revised Force Main Spill Contingency Plan on 8/31/2011. EPA and DOH approved the Plan on 1/30/2012. Copy of Plan is maintained at Pump Station.
Hart Street Force Main Spill Contingency Plan	N/A	CCH submitted a revised Force Main Spill Contingency Plan on 8/31/2011. EPA and DOH approved the Plan on 1/30/2012. Copy of Plan is maintained at Pump Station.
Kahala Force Main Spill Contingency Plan	N/A	CCH submitted a revised Force Main Spill Contingency Plan on 8/31/2011. EPA and DOH approved the Plan on 1/30/2012. Copy of Plan is maintained at Pump Station.
Kaneohe/Kailua Force Main Spill Contingency Plan	N/A	CCH submitted a revised Force Main Spill Contingency Plan on 8/31/2011. EPA and DOH approved the Plan on 1/30/2012. Copy of Plan is maintained at Pump Station.
Waimalu Force Main Spill Contingency Plan	N/A	CCH submitted a revised Force Main Spill Contingency Plan on 8/31/2011. EPA and DOH approved the Plan on 1/30/2012. Copy of Plan is maintained at Pump Station.

Drills and Annual Reviews of Spill Contingency Plans (Paragraph 11.c.iv)

Table 8. Requirements for Spill Contingency Plan Drills

Requirement	CD Year	Compliance Milestone	Status
All of the following must be drilled by 6/30/2016:			

Requirement	CD Year	Compliance Milestone	Status
Kaneohe/Kailua Force Main Spill Contingency Plan Drill	Year One	6/30/2011	CCH performed a drill of the spill contingency plan on the Kaneohe/Kailua force main on 9/16/2010. CCH prepared a summary report and submitted it to EPA and DOH on 3/30/2011. Considering the timing of the conditional approval of the original six spill contingency plans, and that the Kaneohe/Kailua Force Main Spill Contingency Plan was approved subject to one minor condition, EPA and DOH agreed to accept this drill in satisfaction of the Year One requirement.
Kahala Force Main Spill Contingency Plan Drill	Year Two	6/30/2012	CCH performed a drill of the spill contingency plan on the Kahala force main on 6/21/2012.
Hart Street Force Main Spill Contingency Plan Drill	Year Three	6/30/2013	CCH performed a drill of the spill contingency plan on the Hart Street force main on 6/5/2013.
Ala Moana Force Main No. 2 Spill Contingency Plan Drill	Year Four	6/19/2014	CCH performed a drill of the spill contingency plan on the Ala Moana No. 2 force main on 6/19/2014.
Beachwalk Force Main Spill Contingency Plan Drill	Year Five	6/29/2015	CCH performed a drill of the spill contingency plan on the Beachwalk force main on 6/29/2015.

Requirement	CD Year	Compliance Milestone	Status
Spill Contingency Plan Drills for Waimalu Force Main	Year Six	6/30/2016	CCH performed a drill of the spill contingency plan on the Waimalu force main on 6/24/2016.
All of the following must be drilled by 6/30/2020:			
Spill Contingency Plan Drills for Ewa Beach Force Main, Kamehameha Highway Force Main.	Year Seven	6/30/2017	CCH performed a drill of the spill contingency plan on the Lualualei force main on 6/16/2017.
	Year Eight	6/30/2018	CCH performed a drill of the spill contingency plan on each of the following: Niu Valley force main (6/7/2018), Ahuimanu and Kailua Heights force mains (6/21/2018).
	Year Nine	6/30/2019	CCH performed a drill of the spill contingency plan on each of the following: Halawa force main (6/18/2019) and Kailua Road force main (6/20/2019).
	Year Ten	6/30/2020	
Note: SCPs will be reviewed annually and revised as necessary to address any changed conditions.			

B. Force Main Condition Assessments and Follow-Up Action Plans (Paragraph 12)

Condition Assessment Reports Pursuant to 2007 Stipulated Order (Paragraph 12.a)

Table 9. Condition Assessment Reports Pursuant to 2007 Stipulated Order

Requirement	Due Date	Status
Ala Moana Force Main No. 2 Condition Assessment Report	N/A	CCH submitted a revised Force Main Condition Assessment Report on 1/14/2011. EPA and DOH approved this Report on 5/18/2011.
Beachwalk Force Main Condition Assessment Report	N/A	CCH submitted a revised Force Main Condition Assessment Report on 1/14/2011. EPA and DOH approved this Report on 5/18/2011.
Hart Street Force Main Condition Assessment Report	N/A	CCH submitted a revised Force Main Condition Assessment Report on 1/14/2011. EPA and DOH approved this Report on 5/18/2011.
Kahala Force Main Condition Assessment Report	N/A	CCH submitted a revised Force Main Condition Assessment Report on 1/14/2011. EPA and DOH approved this Report on 5/18/2011.
Kaneohe/Kailua Force Main Condition Assessment Report	N/A	CCH submitted a revised Force Main Condition Assessment Report on 1/14/2011. EPA and DOH approved this Report on 5/18/2011.
Waimalu Force Main Condition Assessment Report	N/A	CCH submitted a revised Force Main Condition Assessment Report on 1/14/2011. EPA and DOH approved this Report on 5/18/2011.

Table 10. Ala Moana Force Main No. 2 Repairs, Rehabilitation and Improvements

Requirement	Compliance Milestone	Status
New Pressure manhole (PMH) at WWPS	Complete Construction: 12/31/2008	Construction completed 4/15/2008.
Horizontal bend at Station 23+00 (Bend #1) interim repair	Complete Construction: 09/30/2009	Construction completed 8/9/2009.
Horizontal bend at Station 23+00 (Bend #1) permanent repair	Design NTP: 08/03/2009; Complete Construction: 09/30/2012	Repair completed 8/14/2012.
Cathodic protection system - replace rectifier and anode bed	Complete Construction: 6/17/2014	Time extension submitted (11/15/13) and approved by EPA/DOH (1/13/14) for Complete Construction by 6/17/14. This requirement is also addressed in CD Paragraph 13.c. Construction completed 6/16/2014.
PS#2 Surge Control Improvements	Design NTP: 12/31/2015; Complete Construction: 12/31/2020	Design NTP issued on 12/31/2015. Design Completed. Construction bid opened on 1/9/2019 Construction NTP issued 3/25/2019. Construction in progress.

Table 11. Ala Moana Force Main No. 2 Future Assessments

Requirement	Due Date	Status
Inspect remaining segments of FM No. 2	9/30/2009	Inspection of Force Main No. 2 from Pressure Manhole #2A to the Ala Moana WWPS No. 2 was completed 8/18/2009. Inspection of 800-ft segment of Force Main No. 2 on Sand Island from Pressure Manhole #2C to Pressure Manhole #2E was completed 9/22/2009.
Settlement Monitoring Plan	9/30/2009	Settlement monitoring plan completed 8/27/2009 and updated 12/29/2009.
PS #2 Venturi meter UT testing	12/31/2012	Venturi meter UT testing completed 6/29/2011.
Ala Moana Force Main No. 2 Additional Condition Assessment of Problem Areas	6/30/2011	CCH submitted the Additional Condition Assessment of Problem Areas on 6/29/2011. EPA and DOH approved Report on 2/13/2012.

Table 12. Ala Moana Force Main No. 2 Operation and Maintenance Elements

Requirement	Frequency	Status
Complete survey of cathodic protection system and rectifier adjustment as necessary	Annual	This work is performed as a routine part of the Force Main O&M Program, Section 4.4.5.
Exercise Venturi pit gate valve	Weekly	This work is performed as a routine part of the Force Main O&M Program, Section 4.4.3.

Requirement	Frequency	Status
Inspect and exercise manual air bleeders	Quarterly	This work is performed as a routine part of the Force Main O&M Program, Section 4.4.2.
Interim Operation of PS#1/FM#1 System	Continuous	Normal operation is Force Main No. 1 lead and Force Main No. 2 lag as needed during wet weather and emergencies, until the surge improvements at PS#2 are completed.
Measure and record voltage and current output of rectifier	Monthly	This work is performed as a routine part of the Force Main O&M Program, Section 4.4.5.
Venturi Meter Backflush	Weekly	This work is performed as a routine part of the Force Main O&M Program, Section 4.4.3.
Clean grease at Sand Island Headworks entrance 78" FM	One-time	Grease removal completed on 7/11/2012.

Table 13. Beachwalk Force Main Repairs, Rehabilitation and Improvements

Requirement	Compliance Milestone	Status
Rehabilitate and/or replace three existing air bleeder assemblies, at approximate locations Stations 17+95, 37+60 and 558+62.	Complete Construction: 12/31/2011	Completed on 8/26/2011.

Table 14. Beachwalk Force Main Future Assessments

Requirement	Due Date	Status
Valve vault condition assessment	9/30/2012	Beachwalk valve vault condition assessment report was completed on 8/24/2012.

Requirement	Due Date	Status
Force main condition assessment report	9/30/2017	Field work completed on 06/23/2017. CAR submitted on 09/29/2017.

Table 15. Beachwalk Force Main Operation and Maintenance Elements

Requirement	Frequency	Status
Inspect and exercise valves and appurtenances	Per CCH Force Main O&M Plan	This work is performed as a routine part of the Force Main O&M Program, Section 4.4.2.
Monitor excavations near force main	Continuous	A standard practice for DDC is to be on site during an excavation. As a standard procedure, DDC is notified by DPP when a trenching permit is issued.
Monitor excavations near thrust block at Station 8+37	Continuous	A standard practice for DDC is to be on site during an excavation. As a standard procedure, DDC is notified by DPP when a trenching permit is issued.
Settlement Protection Program	Continuous	ENV has generated a 500-foot buffer in GIS around the force main and provided this information to DPP. When projects are proposed within this corridor, DPP consults with DDC on potential impacts to the force main.
Slow draining and filling operations	During draining and filling	This work is performed as part of standard operations.

Table 16. Ewa Beach FM Condition Assessment Follow-up Action Plan Implement

Requirement	Compliance Milestone	Status
Replace DIP Portion of FM. Construct Valving and Vaults.	Design NTP: 6/30/2017, Construction Completion: 6/30/2020	Design NTP issued 12/9/2015. Design Completed. Construction bid opened on 4/20/18. Construction NTP issued 11/1/18. Construction in progress.

Table 17. Hart Street Force Main Repairs, Rehabilitation and Improvements

Requirement	Compliance Milestone	Status
Coat interior of RCP/HDPE transition flange coupling adaptor (FCA) near Sand Island WWTP	Design NTP: 12/31/2011; Complete Construction: 12/31/2014	NTP for construction issued 7/10/2013 as part of project 11-0035, Phase 2. Construction completed on 9/15/2014.
Install internal pipe seals at approximate locations Station 47+87, 31+23, 31+07, and 30+91.	Design NTP: 12/31/2011; Complete Construction: 12/31/2014	NTP for construction issued 7/10/2013 as part of project 11-0035, Phase 2. Construction completed on 9/15/2014.
Install PMH vaults and air bleeders at approximate locations Station 18+15, 28+80, and 43+87.	Design NTP: 12/31/2012; Complete Construction: 12/31/2016	NTP for construction issued 7/10/2013 as part of Project 11-0035, Phase 2. Construction completed on 9/15/2014.

Requirement	Compliance Milestone	Status
Connect new WWPS to old FM	Design NTP: 12/31/2011; Complete Construction: 12/31/2013	Planning and Design NTP issued 12/31/2010 as part of project 10-0090, Phase 1. Construction completed on 12/27/2013.

Table 18. Hart Street Force Main Future Assessments

Requirement	Due Date	Status
Follow-up internal inspection of the FM	12/31/2019	Field Work Completed. Finalizing Report
Inspect external FM appurtenances	12/31/2019	Field Work Completed. Finalizing Report

Table 19. Hart Street Force Main Operation and Maintenance Elements

Requirement	Frequency	Status
Exercise sluice gate at Sand Island WWTP and 12-inch blow-off valve at Station 43+33	Per CCH Force Main O&M Plan	This work is performed as a routine part of the Force Main O&M Program, Section 4.4.3.
Monitor excavations near thrust blocks	Continuous	A standard practice for DDC is to be on site during an excavation. As a standard procedure, DDC is notified by DPP when a trenching permit is issued.
Monitor excavations near the force main	Continuous	A standard practice for DDC is to be on site during an excavation. As a standard procedure, DDC is notified by DPP when a trenching permit is issued.

Requirement	Frequency	Status
Draining and filling operations conducted slowly	During draining and filling	This work is performed as part of standard operations.

Table 20. Kahala Force Main Repairs, Rehabilitation and Improvements

Requirement	Compliance Milestone	Status
Install PVC liner in discharge manhole	Complete Construction: 03/31/2012	Completed on 1/25/2012.
Remove air injection piping connection and pressure grout surrounding soil	Complete Construction: 12/31/2012	Completed on 8/31/2010.
Re-coat pipe under Kahala Avenue Bridge	Complete Construction: 12/31/2012	Completed on 8/7/2012.

Table 21. Kahala Force Main Future Assessments

Requirement	Due Date	Status
24" diameter FM condition assessment report	9/30/2018	Completed on 9/27/2018.

Table 22. Kahala Force Main Operation and Maintenance Elements

Requirement	Frequency	Status
Inspect and exercise valves and appurtenances	Per CCH Force Main O&M Plan	This work is performed as a routine part of the Force Main O&M Program, Section 4.4.3.

Requirement	Frequency	Status
Monitor excavation near thrust blocks	Continuous	A standard practice for DDC is to be on site during an excavation. As a standard procedure, DDC is notified by DPP when a trenching permit is issued.
Monitor excavations near force main	Continuous	A standard practice for DDC is to be on site during an excavation. As a standard procedure, DDC is notified by DPP when a trenching permit is issued.
Pipe coating inspection on exposed pipes on the bridge and in the vaults	Every two years	This inspection is a routine part of the Force Main O&M Program, Section 4.4.6.

Table 23. Kaneohe/Kailua Force Main Repairs, Rehabilitation and Improvements

Requirement	Compliance Milestone	Status
Recoat above-ground piping at Kaneohe EPS discharge pipe	Complete Construction: 12/31/2015	Recoating completed on 8/7/2012.

Table 24. Kaneohe/Kailua Force Main Future Assessments

Requirement	Due Date	Status
Air Relief Valve (ARV) study	6/30/2012	ARV Study was completed on 6/28/2012.

Table 25. Kaneohe/Kailua Force Main Operation and Maintenance Elements

Requirement	Frequency	Status
Adjust check valves	Per CCH O&M Plan for Kaneohe EPS	This work is performed as a routine part of the Force Main O&M Program, Section 4.4.3.
Inspect and exercise valves and appurtenances	Per CCH Force Main O&M Plan	This work is performed as a routine part of the Force Main O&M Program, Section 4.4.3.
Monitor excavations near the force main	Continuous	A standard practice for DDC is to be on site during an excavation. As a standard procedure, DDC is notified by DPP when a trenching permit is issued.
Monitor excavations near thrust blocks	Continuous	A standard practice for DDC is to be on site during an excavation. As a standard procedure, DDC is notified by DPP when a trenching permit is issued.
Slow draining and filling	During draining and filling operations	This work is performed as part of standard operations.

Table 26. Waimalu Force Main Repairs, Rehabilitation and Improvements

Requirement	Compliance Milestone	Status
Rehabilitate and/or replace air bleeder assembly at Station 388+50	Complete Construction: 12/31/2016	On 5/16/2013, CCH submitted to EPA/DOH a written Request to Modify the Waimalu Force Main Condition Assessment Follow Up Action Items to have this requirement extended in light of the planned construction of a new second force main. EPA and DOH approved the extension on 1/13/2014. Construction completed on 12/29/2016.

Table 27. Waimalu Force Main Future Assessments

Requirement	Due Date	Status
Valve vault condition assessment	9/30/2012	Waimalu valve vault condition assessment report was completed on 8/24/2012.
Cast iron condition assessment report	9/30/2013	On 5/16/2013, CCH submitted to EPA/DOH a written Request to Modify the Waimalu Force Main Condition Assessment Follow Up Action Items to have this requirement eliminated in light of the planned construction of a new second force main. Modification approved by EPA and DOH on 1/13/2014.

Requirement	Due Date	Status
Force Main CCTV from discharge manhole at time of air bleeder appurtenance replacement	12/31/2016	On 5/16/2013, CCH submitted to EPA/DOH a written Request to Modify the Waimalu Force Main Condition Assessment Follow Up Action Items to have this requirement extended in light of the planned construction of a new second force main. EPA and DOH approved the extension on 1/13/2014. Field work completed. Inspection report completed 12/29/2016.
Force main condition assessment report	9/30/2018	Completed on 9/26/2018.

Table 28. Waimalu Force Main Operation and Maintenance Elements

Requirement	Frequency	Status
Inspect, flush, and exercise valves and appurtenances	Per CCH Force Main O&M Plan	This work is performed as a routine part of the Force Main O&M Program, Section 4.4.3.
Monitor excavations near the force main	Continuous	A standard practice for DDC is to be on site during an excavation. As a standard procedure, DDC is notified by DPP when a trenching permit is issued.
Monitor excavations near thrust block at Station 387+25	Continuous	A standard practice for DDC is to be on site during an excavation. As a standard procedure, DDC is notified by DPP when a trenching permit is issued.
Slow draining and filling	During draining and filling operations	This work is performed as part of standard operations.

Additional Condition Assessment Reports (Paragraph 12.b)

Table 29. Additional Condition Assessment Reports

Requirement	Due Date	Status
Ahuimanu Force Main Condition Assessment Report	12/31/2010	EPA and DOH approved the Report on 1/30/2012.
Aliamanu No. 1 and 2 Force Main Condition Assessment Report	12/31/2010	EPA and DOH approved the Report on 1/30/2012.
Lualualei Force Main Condition Assessment Report	12/31/2010	EPA and DOH approved the Report on 1/30/2012.
Awa Street Force Main Condition Assessment Report	12/31/2013	Report submitted to EPA and DOH on 12/30/2013. EPA and DOH conditionally approved the plan with comments on 9/24/2014. CCH addressed the comments, revised the document and submitted a complete "Final" report on 12/23/2014.
Kailua Road Force Main Condition Assessment Report	12/31/2013	Report submitted to EPA and DOH on 12/30/2013. EPA and DOH conditionally approved the plan with comments on 10/28/2014. CCH addressed the comments, revised the document and submitted a complete "Final" report on 1/27/2015.

Requirement	Due Date	Status
Kaneohe Bay No. 3 Force Main Condition Assessment Report	12/31/2013	Report submitted to EPA and DOH on 12/30/2013. EPA and DOH conditionally approved the plan with comments on 8/14/2014. CCH addressed the comments, revised the document and submitted a complete "Final" report on 9/26/2014.
Kunia Force Main Condition Assessment Report	12/31/2013	Report submitted to EPA and DOH on 12/30/2013. EPA and DOH conditionally approved the plan with comments on 10/28/2014. CCH addressed the comments, revised the document and submitted a complete "Final" report on 1/27/2015.
Ewa Beach Force Main Condition Assessment Report	12/31/2014	Report submitted to EPA and DOH on 12/31/2014. EPA and DOH approved the plan on 1/22/2016.
Halawa Force Main Condition Assessment Report	12/31/2014	Report submitted to EPA and DOH on 12/31/2014. EPA and DOH conditionally approved the plan with comments on 5/5/2015. CCH addressed the comments, revised the document and submitted a complete "Final" report on 7/6/2015.

Table 30. Ahuimanu Force Main Repairs, Rehabilitation and Improvements

Requirement	Compliance Milestone	Status
Manhole Rehabilitation	Complete Construction: 12/31/2014	Rehabilitation completed on 4/11/2012.

Requirement	Compliance Milestone	Status
Pipe Repair Corrosion	Complete Construction: 12/31/2015	Completed on 12/15/15.
Pipe Repair Liner Haiku Bypass Road.	Complete Construction: 12/31/2018	Design completed. Construction bid opened on 4/6/2017. Construction in progress. Construction completed 12/20/2018.

Table 31. Ahuimanu Force Main Future Assessments

Requirement	Due Date	Status
ARV Valve Study	4/30/2013	Ahuimanu Force Main Air Study & Ultrasonic Thickness Testing (Final) report was completed on 4/30/2013.
Future Assessment of Excavation Pit	12/31/2013	Ahuimanu Force Main Air Study & Ultrasonic Thickness Testing (Final) report was completed on 4/30/2013.

Table 32. Aliamanu No. 1 and 2 Force Main Future Assessments

Requirement	Compliance Milestone	Status
Future Assessment	12/31/2015	Completed on 10/30/2015.

Table 33. Aliamanu No. 1 and 2 Force Main Operation and Maintenance Elements

Requirement	Frequency	Status
Excavation under FM shall be filled with CLSM to within 6-inches of FM bottom or by other suitable structural support, then bedding of FM shall be replaced to entirely cover the FM.	Continuous	A standard practice for DDC is to be on site during an excavation. As a standard procedure, DDC is notified by DPP when a trenching permit is issued.
Inspect and Repair Valves	Per CCH Force Main O&M Plan	This work is performed as a routine part of the Force Main O&M Program, Section 4.4.2.
No excavation allowed within 20 feet of these FM bends.	Continuous	A standard practice for DDC is to be on site during an excavation. As a standard procedure, DDC is notified by DPP when a trenching permit is issued.
Replace lost bedding based on CCH Standards on excavations adjacent to FM. Force Main Cleaning	Continuous	A standard practice for DDC is to be on site during an excavation. As a standard procedure, DDC is notified by DPP when a trenching permit is issued.
Force Main Cleaning	Per CCH Force Main O&M Plan	This work is performed as a routine part of the Force Main O&M Program, Section 6.2.4.

Table 34. Halawa Force Main Condition Assessment Follow-up Action Plan Implementation

Requirement	Compliance Milestone	Status
Replace force main between the WWPS and the top vertical bend including the venturi flow tube box.	Design NTP 12/31/2016 Construction Completion 12/31/2019	Design NTP issued on 4/10/2015. Design Completed. Construction bid opened on 4/20/2017. Construction NTP issued on 9/11/2017. Construction completed 9/20/2018.
Pre-fabricate discharge setup. This setup will be stored either at the Halawa WWPS or at the Halawa baseyard.	Complete Construction 12/31/2019	Construction completed 9/20/2018.

Table 35. Kailua Road Force Main Repairs, Rehabilitation and Improvements

Requirement	Compliance Milestone	Status
Replace the unjacketed cast iron section of FM.	Design NTP 12/31/2015 Construction Completion 6/30/2018	Design NTP issued on 4/10/2015. Design completed. Construction bid opened on 3/14/2017. Completed on 6/20/2018.

Table 36. Kaneohe Bay No. 3 Force Main Repairs, Rehabilitation and Improvements

Requirement	Compliance Milestone	Status
Replace pipe section with interior longitudinal fracture, 41 feet upstream from discharge manhole	12/31/2014	Completed on 10/27/2014.

Table 37. Kunia Force Main Future Assessments

Requirement	Compliance Milestone	Status
Additional Condition Assessment	6/30/2016	Completed on 6/15/2016.

C. Force Main Maintenance and Spill Prevention Programs (Paragraph 13)

Operation and Maintenance Program (Paragraph 13.a)

CCH is implementing the Force Main O&M program outlined in CD Appendix E. The specific requirements in CD Appendix E are summarized below.

Table 38. Force Main Operation and Maintenance Program Elements

Section	Requirement	Frequency	Status
E-4.1	Force Main Surface Marking	Continuous	Force Main markers were installed on all exposed force mains by December 31, 2011. EPA and DOH have agreed that buried and underwater force mains do not need to be marked. Appendix E will be revised accordingly.

Section	Requirement	Frequency	Status
E-4.2	Force Main Location Information	Continuous	DPP issues trenching permits for projects in CCH rights-of-way. DPP notifies DDC when underground activities are to be conducted near a force main. DDC provides inspectors to verify that measures are being implemented to protect force mains.

E-4.3	Force Main Performance Testing	12 months	Performance Testing Procedures have been developed for conducting annual force main performance tests and have been finalized for adoption. Parameters associated with the performance of the force mains will be monitored and evaluated for comparison to both design conditions and previous performance evaluations. Year Nine performance tests were completed on all force mains by 1/24/2019. Data was collected again for five pump stations' force mains and completed on June 2018. The force mains of the following pump stations were not tested this round due to construction conflicts, metering issues, force main being too short, and complex pipe sizing: Uwalu, Awa Street, Fort DeRussy, Moana Park, Kahanahou, Waikalua, and Waikapoki Pump Stations. The force mains of the following pump stations were not tested because they are no longer in service: Kaneohe Bay No. 1 wastewater pump station and Kaneohe Preliminary Treatment Facility Effluent Pump Stations. The test results were consistent with previous trends with the exception of the

Section	Requirement	Frequency	Status
			seven (7) force mains of the following wastewater pump stations: Grandview, Kemoo Farms, Nakula, Waipio, Alii Bluffs, Kahawai Stream, and Kailua Road wastewater pump stations. These pump stations will be evaluated more closely in the next round of testing scheduled to begin later this Year.
E-4.4.1	Force Main Right-of-Way	3 - 6 months for buried and elevated; 5 years for underwater	Rights-of-way inspections were performed on all buried or elevated, force mains during Year Nine. Inspection log sheets have been developed to provide standardized procedures and data collection.

Section	Requirement	Frequency	Status
E-4.4.2	Force Main Air and Vacuum Relief Valves - Inspect, Test, and Flush	3 months (or as determined based on field observations)	ARVs were visually inspected during Year Nine. Valves that were found to be non-functioning or intentionally kept permanently closed were removed from the list of valves to be exercised and flushed, but they continue to be visually inspected. Based on test data and other information, all ARVs will be considered either for replacement with manual air bleed valves or replacement in kind. Work orders for the inspections are generated from CCH's maintenance management system, and inspection log sheets have been developed to provide standardized procedures and data collection.

Section	Requirement	Frequency	Status
E-4.4.3	Force Main Isolation (Inlet) and Blow-Off Valves	12 months	Inspection and exercising of isolation valves continues to be a standard procedure that is performed on a weekly to monthly basis. All functioning isolation valves were exercised during Year Nine. Non-functioning isolation valves were evaluated for possible repair or replacement. Inspection log sheets have been developed to provide standardized procedures and data collection. Inspection of blow-off valves is being conducted on an annual basis. All blow-off valves are intentionally kept permanently closed.
E-4.4.4	Force Main Significant Rainfall Event (SRE)	As needed	CCH has identified force mains that could potentially be subject to SRE conditions. Inspections of the SRE force mains will be completed within 48 hours after cancellation of a Flood Warning. In Year Nine, there were 11 field-verified inspections on 8/24/2018, 08/28/2018, 09/13/2018, 10/12/2018, 10/19/2018, 10/30/2018, 11/09/2018, 12/28/2018, 02/15/2019, 05/01/2019, and 06/27/2019.

Section	Requirement	Frequency	Status
E-4.4.5	Force Main Corrosion Protection	Electrolysis stations: 12 months; Sacrificial anodes: 3 months; Impressed current: 3 months (or as determined based on field observations)	A study of the condition of the known cathodic protection systems has been completed, which included initial inspections of the systems on the Ala Moana, Pearl City, and Waipahu Force Mains. These three systems will have repairs performed as part of the requirements in CD paragraph 13.c. Corrosion protection systems that have been determined to be non-functional are considered in a "non-functional" mode. Construction of Ala Moana and Pearl City Cathodic Protection systems were completed on 6/16/14. Waipahu Cathodic Protection System was completed on 8/14/2015. Year Nine Testing was performed in June 2018, November 2018, February 2019, & June 2019. The Pearl City rectifier #2 was vandalized and an anode header cable is severed near rectifier #3, and both are scheduled for repair. The remaining systems are functional.
E-4.4.6	Force Main Pipe and Discharge Manhole/Structure Condition Including Coating	12 months	Visual inspections of the internal pipe at the discharge manhole/structure are done on an annual basis. For year 9, visual inspections of all discharge manholes and pipes were completed on February 21, 2019.

E-4.5.1	Force Main Sulfide Monitoring	12 months	Sulfide monitoring, either through atmospheric hydrogen sulfide testing or testing total dissolved sulfides of the effluent, is conducted at the discharge manhole/structure of each force main on an annual basis. Data collected is compiled and reviewed by a qualified corrosion engineer. Atmospheric hydrogen sulfide monitoring was completed at each discharge structure. CCH completed initial sulfide monitoring at each discharge manhole by 12/17/2011. Additional monitoring was performed at eight (8) discharge structures by 5/21/2012, and a table-top exercise was performed to evaluate discharge structure configurations. Monitoring for Year Three was completed on 10/22/2012. Monitoring for Year Four was completed on 10/31/2013. Monitoring for Year Five was completed on 10/27/2014. Monitoring for Year Six was completed on 7/22/2016. Monitoring for Year Seven was completed on 3/21/2017. Monitoring for Year Eight was completed on 12/27/2017. Initial monitoring for Year Nine was completed on 2/21/2019. However, data retrieval errors were encountered on 37

Section	Requirement	Frequency	Status
			of the tests. Retests were conducted and completed in September 2019.
E-4.5.2	Pump Stations with Single Force Mains	Weekly	As part of the standard procedures currently employed by CCH, force mains associated with pump stations with a single force main are flushed at a high velocity of 3 feet per second on a weekly basis Procedures include allowing the wet well to fill and then turning on multiple pumps to achieve the required velocity. Records of the flushing event are recorded in log books at the pump stations.
E-4.5.3	Pump Stations with Multiple Force Mains	Weekly (each force main)	As part of the standard procedures currently employed by CCH, force mains associated with pump stations with multiple force mains are flushed at a high velocity of 3 feet per second. Each force main is flushed every other week. Procedures include allowing the wet well to fill and then turning on multiple pumps to achieve the required velocity. Valves are opened and/or closed to isolate and flush multiple force mains. Records of the flushing event are recorded in log books at the pump stations.

Section	Requirement	Frequency	Status
E-5	Emergency Operations and Emergency Recovery Features	As needed	As part of the standard procedures currently employed by CCH, emergency operations and procedures are undertaken in the event of a force main failure. Emergency operations and procedures are included in the spill contingency plans and flow diversion plans and will be included in additional spill contingency plans and flow diversion plans to be developed.
E-5.1	Force Main All-Weather Access to Valves, Pressure Manholes and Discharge Manholes/Structures	Continuous	CCH determined that provisions for all-weather access to valves, pressure manholes and discharge manholes/structures at all locations for personnel or vehicles to perform repairs to the force main system are in place.
E-5.2	Force Main Pressure Manholes	As needed on newly constructed and rehabilitated force mains	Pressure manholes, spaced at approximately every 1,000 feet as determined by the design conditions, will be considered on newly constructed force mains. When rehabilitation of an existing force main occurs, location of pressure manholes will be considered and installed as needed where appropriate. Pressure manholes may not be appropriate on systems with backup force mains or other spill contingency plans.

Section	Requirement	Frequency	Status
E-6.1	Predictive Maintenance	As issues are identified.	Data collected from the ROW inspections, pipe and discharge manhole/structure inspections, and effluent sulfide monitoring will be used to hone the predictive maintenance program.
E-6.2	Force Main Preventative Maintenance	Continuous	Results from the ARV inspections, Isolation and Blow-off valve inspections, Corrosion Protection inspections and pipe and discharge manhole/structure inspections are used to hone the frequency of preventive maintenance procedures.
E-6.2.4	Force Main Preventive Maintenance - Force Main Cleaning	Varied	Results from the ARV inspections, Isolation and Blow-off valve inspections, Corrosion Protection inspections and pipe and discharge manhole/structure inspections are used to hone the frequency of preventive maintenance procedures. Data gathered from annual performance testing is reviewed, and methods and frequencies of force main cleaning are validated and/or updated.

Section	Requirement	Frequency	Status
E-6.3	Force Main Corrective Maintenance	Continuous	As part of the standard procedures currently employed by CCH, corrective maintenance procedures are followed such that planned repairs are completed as categorized and prioritized within the WTD work order system.
E-6.4	Force Main Reactive Maintenance	Continuous	As part of the standard procedures currently employed by CCH, reactive maintenance procedures are followed such that unplanned repairs are completed as categorized and prioritized within the WTD work order priority system. Unplanned reactive maintenance can be a Priority 5 if the repair is considered an Emergency/ Regulatory Violations/Safety concern, or a Priority 4 if the repair is considered as Urgent.
E-6.5	Force Main Spare Parts	Continuous	As part of the standard procedures currently employed by CCH, an inventory of spare parts is maintained in the store rooms of the each region in order to provide timely support for maintenance and repairs. The spare parts list is based on the asset management listings, and the repair lists in the spill contingency plans. As parts are deployed for use, the inventory is replenished.

Overflow Structures (Paragraph 13.b)

CCH updated its design standards to suspend sections related to overflow structures. A letter dated March 11, 2009, to all design consultants in CCH's consultant database announced the change. The letter and design standards are on the ENV website. The letter suspended the sections of the design standards that referred to designed overflow structures.

Table 39. Force Main Overflow Structure Requirements

Requirement	Due Date	Status
Force Main Overflow Structure Design Standards Update	12/17/2010	Completed. Letter issued 3/11/2009.
Force Main Overflow Structure Report	12/17/2011	CCH submitted the Force Main Overflow Structure Report on 12/16/2011. EPA and DOH approved the Report on 2/13/2012.
Force Main Overflow Structure Closure Project	2/12/2013	All work was completed prior to 2/12/2013.

Cathodic Protection Systems (Paragraph 13.c)

CCH submitted a study of existing Cathodic Protection Systems installed for Ala Moana, Pearl City, and Waipahu force mains to EPA and DOH on June 17, 2011. CCH is proceeding with construction as necessary.

Table 40. Cathodic Protection System Requirements

Requirement	Compliance Milestone	DDC Serial Number	Status
Ala Moana Force Main Cathodic Protection Plan	6/17/2011	08-0565	Completed. Report submitted to EPA and DOH 6/17/2011.

Requirement	Compliance Milestone	DDC Serial Number	Status
Pearl City Force Main Cathodic Protection Plan	6/17/2011	08-0565	Completed. Report submitted to EPA and DOH 6/17/2011.
Waipahu Force Main Cathodic Protection Plan	6/17/2011	08-0565	Completed. Report submitted to EPA and DOH 6/17/2011.
Ala Moana Force Main Cathodic Protection Project	12/17/2013	08-0565	Construction completed on 6/16/2014.
Pearl City Force Main Cathodic Protection Project	6/17/2014	08-0565	Construction completed on 6/16/2014.
Waipahu Force Main Cathodic Protection Project	Original 6/17/2014 Extended to 8/17/2015	08-0565	CCH requested an extension to 8/17/2015 for construction completion due to U.S. Navy permit approval and anticipated restrictions due to construction location being in a munitions "blast zone". EPA/DOH approved the extension on 6/12/2015. Construction Completed on 8/14/2015.

Kaneohe Bay WWPS #2 Force Main (Paragraph 13.d)

Table 41. Kaneohe Bay WWPS #2 Force Main Requirements

Requirement	Compliance Milestone	DDC Serial Number	Status
Kaneohe Bay WWPS No. 2 Force Main	Design NTP: 12/31/2013; Construction NTP: 12/31/2015; Complete Construction: 12/31/2016	08-0744	Design NTP issued on 12/19/2013. Design completed. Construction NTP issued on 8/28/2015. Construction Completed on 12/28/2016.

D. Beachwalk Force Main Projects (Paragraph 14)

Table 42. Beachwalk Force Main Requirements

Requirement	Compliance Milestone	DDC Serial Number	Status
Beachwalk Force Main Construction of Permanent Force Main	Original Completion Milestone: 12/31/2012; Complete Construction: 04/12/2013	00-0519	Construction completed on 3/28/2013.

E. Ala Moana Force Main Projects (Paragraph 15)

Table 43. Ala Moana Force Main Assessment Requirements

Requirement	Due Date	Status
Ala Moana Force Main No. 2 Additional Condition Assessment of Problem Areas	6/30/2011	CCH submitted the Additional Condition Assessment of Problem Areas on 6/29/2011. EPA and DOH approved Report on 2/13/2012.
Perform 2021 Condition Assessment	6/30/2021	

Table 44. Ala Moana Force Main Construction Requirements

Requirement	Compliance Milestone	DDC Serial Number	Status
Ala Moana Force Main No. 3 Construction	Construction NTP: 07/31/2012; Original Completion Milestone : 12/31/2014 Complete Construction: 8/12/2015	06-0065	Construction NTP issued 11/28/2011. Construction in progress. On 12/29/2014, CCH requested an extension to 8/12/2015 for construction completion due to various unforeseen, contractor-related, and other issues that adversely impacted the project schedule. On 6/12/2015 EPA and DOH approved the extension request. Construction Completed on 8/10/2015.

F. Old Hart Street Force Main - Maintenance and Improvements (Paragraph 16)

CCH has completed the construction of a permanent connection between the Old Hart Street Force Main and the Hart Street WWPS. The connection will enable the Old Hart Street Force Main to be used as a backup for the Hart Street WWPS. CCH is maintaining the Old Hart Street Force Main as a backup to handle emergency flows to the extent possible.

Table 45. Hart Street Force Main Requirements

Requirement	Compliance Milestone	DDC Serial Number	Status
Connect new WWPS to old FM	Construction NTP: 12/31/2011; Complete Construction: 12/31/2013	10-0090	Planning and Design NTP issued 12/31/2010 as part of project 10-0090, Phase 1. Construction completed on 12/27/13.

G. Kaneohe/Kailua Force Main Project (Paragraph 17)

The First Amended Consent Decree, entered March 27, 2012, provided for the construction of a Kaneohe-Kailua gravity tunnel and an associated influent pump station in lieu of a new force main and storage projects in Kaneohe and Kailua.

Table 46. Kaneohe/Kailua Force Main Requirements

Requirement	Compliance Milestone	DDC Serial Number	Status
Tunnel Sizing Methodology Report	04/12/2012	None	CCH submitted a Tunnel Sizing Methodology Report on 4/12/2012.
Kailua WWTP Tunnel Influent Pump Station	Design NTP: 06/30/2012; Construction NTP: 12/31/2015; Complete Construction: 06/30/2018	None	Planning & Design NTP issued 4/30/2012. Construction NTP issued on 10/2/2015. Completed construction on 6/12/2018.

Requirement	Compliance Milestone	DDC Serial Number	Status
Kaneohe/Kailua Tunnel Program	Design NTP: 06/30/2012; Construction NTP: 12/31/2014; Complete Construction: 06/30/2018	11-0241	Planning & Design NTP issued 4/30/2012. Construction NTP issued 1/6/2014. Completed construction on 6/12/2018.
Kaneohe/Kailua Force Main Supplemental Condition Assessment	12/31/2014	None	Report submitted to EPA and DOH on 12/31/2014. Received EPA Conditional Approval on 7/7/2015. CCH addressed the comments, revised the document and submitted a complete "Final" report on 09/21/2015.
Kaneohe/Kailua Force Main and Kaneohe Pretreatment Facility Pump Station 2-Yr Residual Operation Period	06/30/2018	None	Started on 6/12/2018.

H. 1999 Final Sewer I/I Plan Projects (Paragraph 18)

The projects in Paragraph 18 were originally identified in the 1999 Infiltration/Inflow (I/I) Plan. These projects have changed over time as the result of further planning and design efforts by CCH. By tracking the individual sewer segments associated with each CD line item, CCH is able to accurately report on the status of each CD requirement.

Compliance Milestone: Complete Construction 12/31/2011 (Paragraph 18.b)

CCH maintains a database of the sewer segments that are associated with each of these projects, so that the history of each project and each sewer segment can be tracked. This database was used to define the sewer segments that are included in the three projects in Paragraph 18.b.

Table 47. Paragraph 18.b Requirements (Complete Construction December 31, 2011)

Requirement	DDC Serial Number	Status
SI-CS-05 Kalihi Valley Reconstructed Sewer (aka Kalihi Valley Relief Sewer)	05-0284	This included one pipe segment, Sewer ID 250497. That sewer segment has been completed as part of project 08-0329. Construction completed on 4/1/2011.
SI-CS-36 Kalihi/Nuuanu Area Sewer Rehabilitation (aka Lanakila Ave. Relief Sewer), portion	08-0285	This included two sewer segments, Sewer ID 278874 and 280867. The sewer segments were completed as part of the IDIQ2 Project; see Appendix H. Construction completed on 9/19/2008.
SI-CS-63A Sand Island Basin Misc. Sewer Rehabilitation (aka Sand Island Structural Rehabilitation-Phase 1)	05-0284	This included one pipe segment, Sewer ID 294754. That sewer segment has been completed as part of project 02-1301. Construction completed on 12/31/2008.

Compliance Milestone: Complete Construction 12/31/2013 (Paragraph 18.c)

Table 48. Paragraph 18.c Requirements (Complete Construction December 31, 2013)

Requirement	DDC Serial Number	Status
HN-CS-10B Waimalu Sewer Rehabilitation/Reconstruction Phase II - 7D01C (aka Honouliuli Sewer Rehabilitation - 7D01C)	09-0149	Construction completed on 9/9/2011.
HN-CS-13 Waimalu Sewer Rehabilitation/Reconstruction Phase I - 7D01C (aka Waimalu Sewer Replacement)	09-0149	Construction completed on 9/9/2011.
HN-TP-01 Honouliuli WWTP Upgrade	03-0417	Construction completed on 7/31/2010.
KK-PS-01 Enchanted Lakes Wastewater Pump Station Upgrade	02-1305	Construction completed on 12/27/2013.
SI-CS-51A Sewer Manhole and Pipe Rehabilitation at Various Locations (aka Republican St.-Nimitz Hwy-Awa Structural Rehabilitation - Phase 1)	02-1304	Construction completed on 2/9/2012.
SI-CS-53 Ala Moana Blvd./Auahi St. Sewer Rehabilitation (aka Auahi St. Structural Rehabilitation)	05-0653	A portion of this work was completed on 10/17/1997. The 6' x 6' Box portion of this project was Construction completed on 12/31/2013 under DDC serial number 11-0136.

Requirement	DDC Serial Number	Status
SI-CS-53 Ala Moana Blvd./Auahi St. Sewer Rehabilitation (aka Auahi St. Structural Rehabilitation 6' x 6' Box)	05-0271	The 14-inch structural rehabilitation portion of this project was Construction completed on 6/27/2011 under DDC serial number 11-0429.
SI-CS-54 Ala Moana Blvd./Auahi St. Sewer Rehabilitation (aka Ala Moana Blvd.-24 Structural Rehabilitation)	05-0271	The remaining 24-inch sewer along Ala Moana Blvd was Construction completed on 5/16/2011 under DDC serial number 11-0113.
SI-CS-55 Ala Moana Blvd./Auahi St. Sewer Rehabilitation (aka Ala Moana Blvd.-36 Structural Rehabilitation)	05-0271	The grouting portion of this project was Construction completed on 8/26/2014 under DDC serial number 11-0136. Abandonment of 36-inch sewer was completed on 6/9/2012, after service was transferred to other lines in accordance with EPA approval on 5/8/2012.
SI-CS-57 Ala Moana Blvd. Sewer Reconstruction (aka Ala Moana Blvd.-16 Structural Rehabilitation)	03-0412	Construction completed on 4/4/2011.
SI-CS-59 Waikiki Sewer Rehabilitation/Reconstruction	04-1159	Construction completed on 6/19/2013.
SI-PS-14 Kuliouou Sewer Rehabilitation and WWPS Modification (aka Kuliouou WWPS Modification)	08-0098	Construction completed on 4/7/2010.

Requirement	DDC Serial Number	Status
WH-TP-01 Wahiawa Wastewater Treatment Plant Influent Pump Station Upgrade and Equalization Facility (aka Modify IPS and New Storage at Wahiawa WWTP)	02-1306	Construction completed on 1/2/2013.
WM-CS-02 Waimanalo Sewer Rehabilitation	06-0354	Construction completed on 11/5/2013.

Compliance Milestone: Complete Construction 12/31/2014 (Paragraph 18.d)

Table 49. Paragraph 18.d Requirements (Complete Construction December 31, 2014)

Requirement	DDC Serial Number	Status
HN-TP-02 Mililani WWPTF Storage and Headworks Upgrade (aka Mililani WWPTF Upgrade)	00-0564	Construction completed on 11/24/2014.
SI-CS-09 Kahanu St., School St., and Umi St. Relief Sewers (aka School St. Relief Sewer)	04-1147	Construction completed on 8/2/2011.
SI-CS-18 Kalanianaole Highway Sewer	04-1454	Construction completed on 9/16/2011
SI-CS-37 Kahanu St., School St., and Umi St. Relief Sewers (aka Umi St. Relief Sewer)	04-1147	Construction completed on 8/2/2011.

Requirement	DDC Serial Number	Status
SI-CS-37 Kahanu St., School St., and Umi St. Relief Sewers (aka Umi St. Relief Sewer)	10-0037	Construction completed on 8/20/2011.
SI-CS-38 Kahanu St., School St., and Umi St. Relief Sewers (aka Kahanu St. Relief Sewer)	04-1147	Construction completed on 8/2/2011.
SI-CS-38 Kahanu St., School St., and Umi St. Relief Sewers (aka Kahanu St. Relief Sewer)	08-0890	Construction completed on 3/26/2011.
SI-CS-62 Kalanianaole Highway Sewer (aka Kalanianaole Hwy Structural Rehabilitation)	04-1454	Construction completed on 9/16/2011.
SI-PS-16 Aliamanu Nos. 1 & 2 WWPS Upgrade and Relief Sewer (aka Aliamanu No. 1 WWPS Upgrade - Phase 1)	08-0729	Construction completed on 3/30/2012.
SI-PS-17 Aliamanu Nos. 1 & 2 WWPS Upgrade and Relief Sewer (aka Aliamanu No. 2 WWPS Upgrade - Phase 1)	08-0729	Construction completed on 3/30/2012.

Compliance Milestone: Complete Construction 12/31/2016 (Paragraph 18.e)

Table 50. Paragraph 18.e Requirements (Complete Construction December 31, 2016)

Requirement	DDC Serial Number	Status
HN-CS-04 Renton Road Sewer and Manhole Rehabilitation (portion: Eastern/Makakilo trunk)	pvt	Lower portion was completed by a private developer. CCH completed upper portion. Construction NTP issued for upper portion of trunk on 6/19/2015. Upper portion completed on 3/9/2016. Lower portion completed on 12/16/16.
HN-CS-05B Leeward Area Sewer and Manhole Rehabilitation (aka Waipahu Manhole and Pipe Rehabilitation)	06-0090	Construction completed on 12/27/2012.
HN-CS-05C Leeward Area Sewer and Manhole Rehabilitation (aka Ewa Manhole Rehabilitation)	06-0090	Construction completed on 12/27/2012.
HN-CS-10A Waiau Area Sewer Rehabilitation/Reconstruction (aka Honouliuli Sewer Rehabilitation - 7D01A)	06-0664	This project was broken into two construction projects. DDC serial number 06-0664 construction completed 9/27/2013. DDC serial number 13-0110 construction completed on 11/9/2016.
HN-CS-10C Foster Village Sewer Rehabilitation/Reconstruction (aka Honouliuli Sewer Rehabilitation - 7F05)	05-0275	Construction completed on 7/22/2011.

Requirement	DDC Serial Number	Status
KK-CS-04 Kailua/Kaneohe Sewer Manhole and Pipe Structural Rehabilitation (aka Oneawa St. Structural Rehabilitation)	05-0281	Construction completed on 2/22/2011.
KK-CS-06 Kailua/Kaneohe Sewer Manhole and Pipe Structural Rehabilitation (aka Kailua Beach Park Structural Rehabilitation)	05-0281	Construction completed on 2/22/2011.
KK-CS-09 Kailua/Kaneohe Sewer Manhole and Pipe Structural Rehabilitation (aka Kaneohe Bay Drive Structural Rehabilitation)	08-0222	This work was completed under DDC serial number 05-0281. Construction completed on 2/22/2011.
KK-CS-12B Kailua/Kaneohe Sewer Manhole and Pipe Structural Rehabilitation (aka Kailua/Kaneohe Manhole and Pipe Structural Rehabilitation - Phase 2)	05-0281	Construction completed on 2/22/2011.
KK-CS-12B Kailua/Kaneohe Sewer Manhole and Pipe Structural Rehabilitation (aka Kailua/Kaneohe Manhole and Pipe Structural Rehabilitation - Phase 2)	08-0455	Construction completed on 5/22/2015.

Requirement	DDC Serial Number	Status
SI-CS-30 Moiliili-Kapahulu Sewer Rehabilitation/Reconstruction (aka Date St. Relief Sewer)	06-0092	Construction completed on 4/11/2014.
SI-CS-43 Iwilei/Kalihi Kai Sewer Rehabilitation/Reconstruction (aka North King St. Relief Sewer)	06-0636	Scope moved to Paragraph 18.f, SI-PS-04 Awa Street WWPS Upgrade. The work was evaluated and recommendations were made. Necessary replacement/relief sewers were constructed under the Peterson Lane and Pua Lane Sewer Rehabilitation project, which was completed on 9/28/2010. Hydraulic capacity was re-evaluated using the City's current hydraulic flow model, and was determined to be sufficient.
SI-CS-50 Airport Sewer Rehabilitation/Reconstruction (aka Airport Structural Rehabilitation)	09-0464	Construction completed on 12/31/2014.
SI-CS-50 Airport Sewer Rehabilitation/Reconstruction (aka Airport Structural Rehabilitation)	06-0063	Construction completed on 10/18/2011.

Requirement	DDC Serial Number	Status
SI-CS-51B Iwilei/Kalihi Kai Sewer Rehabilitation/Reconstruction & Kalihi/Nuuanu Area Sewer Rehabilitation (aka Republican St.-Nimitz Hwy-Awa Structural Rehabilitation-Phase 2)	05-0284	The new DDC Serial No. is 10-0220. DDC 05-0284 is the parent job no. for the basin study. Multiple projects were created from the study and given new DDC Project Nos. This scope of work includes SMH repair under the recently created Kalihi Nuuanu Phase 1K project (DDC 10-0220). Construction completed on 10/27/2015.
SI-CS-52 Iwilei/Kalihi Kai Sewer Rehabilitation/Reconstruction (aka Dillingham Blvd.-Iwilei Structural Rehabilitation)	06-0636	Scope moved to Paragraph 18.f, SI-PS-04 Awa Street WWPS Upgrade. Work on lines and manholes requiring rehabilitation/replacement is being conducted through IDIQ Work Order, Awa St./Dillingham No. 2017-03-22. Construction NTP issued on 7/5/2017. Construction in progress. A section of the 24-inch sewer, located between manhole 4100695 and manhole 4100703, was replaced with new 30-inch sewer under a private development project, and was completed on 6/1/2013.

Requirement	DDC Serial Number	Status
SI-CS-58 Moiliili-Kapahulu Sewer Rehabilitation/Reconstruction (aka Moiliili-Kapahulu Structural Rehabilitation)	06-0092	Construction completed on 4/11/2014.
SI-CS-60 Old Sewer Tunnel Rehabilitation (aka Old Tunnel Structural Rehabilitation)	08-0107	Construction completed on 8/25/2016.

Projects Requiring Further Study (Paragraph 18.f)

The 39 projects in Paragraph 18.f are being addressed through various planning contracts and facility plans. The projects that are not included in a DDC planning contract (identified as "NONE" in the DDC Serial Number column) are being addressed in on-going wastewater regional facility plans. As provided in the CD, CCH's evaluation of a project may result in a recommendation that the project be eliminated. The report for evaluations and recommendations was submitted on 12/17/2014. EPA and DOH approved the report and recommendations on 4/14/2015. Those recommended options are set forth below in Table 51. Project design interim compliance milestones and construction compliance milestones that are no later than June 30, 2020 appropriately incorporated into the Consent Decree.

Table 51. Paragraph 18.f Requirements

Requirement	DDC Serial Number	Compliance Milestone	Status
HN-CS-07 Honouliuli/Waipahu/Pearl City Wastewater Facilities (aka Waimalu Wastewater System Relief)	06-0667	None	Eliminated
HN-CS-08 Honouliuli/Waipahu/Pearl City Wastewater Facilities (aka Pearl City Trunk Sewer Relief)	06-0667	None	Eliminated
HN-CS-09 Pacific Palisades Diversion Sewer Line (aka Pacific Palisades Relief Sewer)	09-0393	None	Eliminated
HN-CS-14 Waipahu Sewer Replacement/Relief Sewer (aka Waipahu Sewer Replacement)	03-0440	None	Eliminated
HN-PS-01 Waipio WWPS Upgrade	06-0669	None	Eliminated

Requirement	DDC Serial Number	Compliance Milestone	Status
HN-PS-04 Honouliuli/Waipahu/Pearl City Wastewater Facilities (aka Pearl City WWPS Relief)	06-0667	Design NTP: 7/31/2015 Construction NTP: 12/31/2016	Complete Construction after 6/30/2020. Design NTP issued 9/18/2013. For Waipahu PS piping modification project. Construction NTP issued 9/24/2014. Construction completed on 6/30/2017.
KK-CS-01 Kalaheo Ave. Relief Sewer	08-0741	None	Eliminated
KK-CS-13 Kaneohe Sewer Relief/Rehabilitation, C2 Projects (aka Alii Shores Relief Sewer)	03-0414	None	This portion of the requirement was performed under DDC serial number 03-0414. Construction completed on 1/9/2009.
KK-CS-13 Kaneohe Sewer Relief/Rehabilitation, C2 Projects (aka Alii Shores Relief Sewer)	08-0095	None	Eliminated
KK-CS-15 Hele St. Sewer Relief/Rehabilitation (aka Hele St. Relief Sewer)	09-0532		Design NTP, Construction NTP and Complete Construction, all to be completed after 6/30/2020.
KK-CS-20 Kaneohe Sewer Relief/Rehabilitation, C2 Projects (aka Kaha St. Relief Sewer)	08-0095	None	Eliminated

Requirement	DDC Serial Number	Compliance Milestone	Status
KK-CS-21 Kaneohe Sewer Relief/Rehabilitation, C2 Projects (aka Kahuhipa St. Relief Sewer)	08-0095		Design NTP, Construction NTP and Complete Construction, all to be completed after 6/30/2020.
KK-CS-22 Kaneohe Sewer Relief/Rehabilitation, C2 Projects (aka Namoku St. Relief Sewer)	08-0095	None	Eliminated
KK-CS-23 Kaneohe Sewer Relief/Rehabilitation, C2 Projects (aka Puohala Relief Sewer)	08-0095	None	Eliminated
KK-CS-25 Kaneohe Sewer Relief/Rehabilitation, C2 Projects (aka Makahio St. Relief Sewer)	08-0095		Design NTP, Construction NTP and Complete Construction, all to be completed after 6/30/2020.
KK-PS-02 Waikalua WWPS Upgrade	08-0115		Design NTP, Construction NTP and Complete Construction, all to be completed after 6/30/2020.
KK-PS-10 Kahanahou Pump Station Upgrade	08-0734	Design NTP: 12/31/2016 Construction NTP: 7/31/2018 Complete Construction: 6/30/2020	Design NTP issued 6/9/2016. Design completed. Construction project bid opened on 4/28/2017. Construction completed on 9/20/2017.

Requirement	DDC Serial Number	Compliance Milestone	Status
KK-PS-12 Waikapoki WWPS Upgrade	06-0102	Design NTP: 12/31/2016 Construction NTP: 7/31/2018 Complete Construction: 6/30/2020	Design NTP issued 3/14/2012. Design completed. Construction bid opened on 4/20/2017. Construction NTP issued 9/25/2017. Construction completed on 9/25/2017.
SI-CS-01 Aliamanu Nos. 1 & 2 WWPS Upgrade and Relief Sewer (aka Airport Relief Sewer)	04-1139	None	Eliminated

Requirement	DDC Serial Number	Compliance Milestone	Status
SI-CS-08 Iwilei/Kalihi Kai Sewer Rehabilitation/ Reconstruction (aka Dillingham Blvd-Iwilei Relief Sewer)	06-0636	Design NTP: 7/31/2017 Construction NTP: 12/31/2018 Complete Construction: 6/30/2020	After evaluation and hydraulic analysis of the project, recommendations were made for the two sewer lines. Construction for Line A can be completed after 6/30/2020. A new relief sewer on Waiakamilo Road from Nimitz Highway to Dillingham Boulevard is being constructed to satisfy the project for Line B. Construction NTP issued on 6/27/2018. Construction in progress.

Requirement	DDC Serial Number	Compliance Milestone	Status
SI-CS-10 Chinatown Sewer Rehabilitation (aka College Walk-30 Replacement Sewer)	08-0083	Design NTP: 12/31/2016 Construction NTP: 7/31/2018 Complete Construction: 6/30/2020	SI-CS-10 is part of Awa St. WWPS FM & Sewer System Improvements - Waiakamilo Rd Trunk Sewer. Design NTP issued 5/10/2015. Design completed. Construction bids opened on 12/19/2017. Construction NTP issued on 6/27/2018. Construction in progress.
SI-CS-15 Manoa Sewer Relief/Rehabilitation (aka Manoa Relief Sewer)	08-0102		Design NTP, Construction NTP and Complete Construction, all after 6/30/2020.
SI-CS-17 Palolo Valley Sewer Rehabilitation (aka Palolo Relief Sewer)	08-0108	Design NTP: 7/31/2017 Construction NTP: 12/31/2018 Complete Construction: 6/30/2020	Portion only to be completed by 6/30/2020. Other portion to be completed after 6/30/2020. Including design and compliance milestones. Design NTP issued 8/12/2016. Construction bids opened on 3/22/2018. Construction NTP issued 7/16/2018. Construction in progress.

Requirement	DDC Serial Number	Compliance Milestone	Status
SI-CS-22 Chinatown Sewer Rehabilitation (aka River St. Relief Sewer)	08-0083	None	Eliminated
SI-CS-22 Chinatown Sewer Rehabilitation (aka River St. Relief Sewer)	08-0331		This portion of the work was completed under DDC serial number 08-0331. Construction completed 9/10/2009.
SI-CS-27 Palolo Valley Sewer Rehabilitation (aka Waiomao Stream Relief Sewer)	08-0108		Design NTP, Construction NTP and Complete Construction, all after 6/30/2020.
SI-CS-28 Kalihi/Nuuanu Area Sewer Rehabilitation (aka Auwaiolimu St. Relief Sewer)	05-0284		Design NTP, Construction NTP and Complete Construction, all after 6/30/2020.
SI-CS-29 Kalihi/Nuuanu Area Sewer Rehabilitation (southern makai portion) (aka Nuuanu Relief Sewer)	05-0284	Design NTP: 7/31/2017 Construction NTP: 12/31/2018 Complete Construction: 6/30/2020	Design NTP issued 6/27/2014. Design completed. Construction bids opened on 2/28/2018 and 3/2/2018. Construction NTP issued on 7/9/2018. Construction in progress.
SI-CS-36 Kalihi/Nuuanu Area Sewer Rehabilitation (aka Lanakila Ave. Relief Sewer), portion	05-0284	None	Eliminated

Requirement	DDC Serial Number	Compliance Milestone	Status
SI-CS-39 Kalihi/Nuuanu Area Sewer Rehabilitation (aka Kalani St. Relief Sewer), portion	05-0284		Design NTP, Construction NTP and Complete Construction: after 6/30/2020.
SI-CS-42 Dowsett Highlands Relief Sewer	10-0212	Design NTP: 7/31/2017 Construction NTP: 12/31/2018 Complete Construction: 6/30/2020	Design NTP issued 6/27/2014. Design completed. Construction bids opened on 2/28/2018 and 3/2/2018. Construction NTP issued on 7/9/2018. Construction in progress.
SI-PS-01 Kamehameha Hwy WWPS Upgrade	09-0531		Design NTP, Construction NTP and Complete Construction: after 6/30/2020.
SI-PS-04 Awa Street WWPS Upgrade	10-0208	Design NTP: 7/31/2017 Construction NTP: 12/31/2018 Complete Construction: 6/30/2020	Design completed. Construction bid opened on 12/19/2017. Construction NTP issued on 6/27/2018. Construction in progress.

Requirement	DDC Serial Number	Compliance Milestone	Status
SI-PS-06 Sand Island WWTP and Sewer Basin Facilities (aka Ala Moana WWPS and Force Main; upgrade of WWPS to 2020 flows will be further evaluated; note: the force main work is included in Paragraph 15)	08-0074	None	Eliminated
SI-PS-06 Sand Island WWTP and Sewer Basin Facilities (aka Ala Moana WWPS and Force Main; upgrade of WWPS to 2020 flows will be further evaluated; note: the force main work is included in Paragraph 15)	06-0065		This work is the Ala Moana Force Main No. 3, which is already addressed under CD Paragraph 15. Construction completed on 8/10/2015.
SI-PS-16 Aliamanu Nos. 1 & 2 WWPS Upgrade and Relief Sewer (aka Aliamanu No. 1 WWPS Upgrade – Phase 2)	04-1139		Design NTP, Construction NTP and Complete Construction: after 6/30/2020.
SI-PS-17 Aliamanu Nos. 1 & 2 WWPS Upgrade and Relief Sewer (aka Aliamanu No. 2 WWPS Upgrade – Phase 2)	04-1139		Design NTP, Construction NTP and Complete Construction: after 6/30/2020.

Requirement	DDC Serial Number	Compliance Milestone	Status
WH-PS-02 Uwalu WWPS Upgrade	08-0113	None	Eliminated

Wet Weather I/I Assessment Update (Paragraph 18.g)

Table 52. Wet Weather I/I Assessment Update Schedule Requirements

Requirement	Due Date	Status
EPA/DOH Meeting to Discuss Data from Wet Weather Season 1	9/30/2010	Completed. This meeting was held on 9/14/2010 with CCH, EPA and DOH.
EPA/DOH Meeting to Discuss Data from Wet Weather Season 2	9/30/2011	By mutual agreement, this meeting was held on 10/04/2011 with CCH, EPA and DOH.
EPA/DOH Meeting to Discuss Proposed Hydraulic Capacity Projects	4/18/2012	By mutual agreement, this meeting was held on 4/18/2012 with CCH, EPA and DOH.
Complete Collection of Precipitation and Flow Monitoring Data	8/1/2011	Completed on 6/30/2011.
Peak Flow Cost Effectiveness Analysis Report	12/31/2012	Peak Flow Cost Effectiveness Analysis Report finalized on 12/26/2012.

Table 53. Wet Weather I/I Assessment Update Submittal Requirements

Requirement	Due Date	Status
Preliminary Deferred Projects Report	12/31/2012	CCH submitted the Preliminary Deferred Projects report on 12/28/2012
Final Deferred Projects Report	11/30/2013	Report submitted to EPA and DOH on 11/27/2013. EPA and DOH commented on 4/2/2014. CCH submitted a Revised Report to EPA and DOH on 6/9/2014. EPA and DOH approved the report on 9/24/2014.
Wet Weather I/I Assessment Update	12/31/2013	Report submitted to EPA and DOH on 12/30/2013.
Update of Capital Improvement Plan	Compliance milestone: 9/24/15	Plan completed and approved on 6/22/2015.

Wet Weather I/I Assessment Update (Paragraph 18.g.vii)

Table 54. Paragraph 18.g.vii Requirements

Requirement	DDC Serial Number	Compliance Milestone	Status
SI-GM-01 Sewer I/I RR Project – Ala Moana Tributary Basin (aka: Punahou Street Relief Sewer)		Design NTP 12/31/2016, Construction NTP: 7/31/2018, Complete Construction: 06/30/2020	Design NTP issued 12/29/16. Design completed. Construction bids opened on 4/17/2018. Construction NTP issued on 7/2/18. Construction in progress.

Wet Weather I/I Assessment Update (Paragraph 18.g.ix)

Table 55. Paragraph 18.g.ix Requirements

Requirement	DDC Serial Number	Compliance Milestone	Status
KK-CS-27 Waikapoki Relief Sewer (Windward Tributary Area)	08-0734	Design NTP: 12/31/2016 Construction NTP: 7/31/2018 Complete Construction: 06/30/2020	IDIQ on-going. Construction in progress.

Requirement	DDC Serial Number	Compliance Milestone	Status
SI-CS-29 Nuuanu Relief Sewer (Dowsett Highlands Relief Sewer)	16-0137	Design NTP: 7/31/2017 Construction NTP: 12/31/2018 Complete Construction: 06/30/2020	Design NTP issued 6/27/2014. Design completed. Construction bids opened on 2/28/2018 and 3/2/2018. Construction NTP issued on 7/9/2018. Construction in progress.
SI-CS-44 Alewa Heights Relief Sewer (Hart St. Tributary Area)	13-0103	Design NTP: 12/31/2016 Construction NTP: 7/31/2018 Complete Construction: 06/30/2020	Construction completed on 1/10/2018 via IDIQ work.
SI-CS-49 Waikiki Relief Sewer (Ala Moana Tributary Area)	13-0102	Design NTP: 12/31/2016 Construction NTP: 7/31/2018 Complete Construction: 06/30/2020	Design NTP issued 12/28/2016. Construction NTP issued on 7/19/18. Construction in progress.

I. Gravity Main Condition Assessment (Paragraph 19)

CCH is conducting a program of inspection and condition assessment for selected gravity mains. Inspections are performed using closed-circuit television (CCTV) and following the guidelines provided by the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) standard. During CCTV inspection, the camera operator codifies each defect using the PACP system and generates a database with the severity of each defect. If there are defects that create an imminent risk of a spill, that information is flagged for immediate follow-up. After the initial assessment, the videos and databases are forwarded to CCH engineering staff for further review and development of rehabilitation and replacement projects.

During the period from 1/01/2009 through 6/30/2019, CCH performed closed-circuit television (CCTV) inspection and condition assessment on approximately 1,062 miles of gravity sewer. The progress is charted in Figure 1.

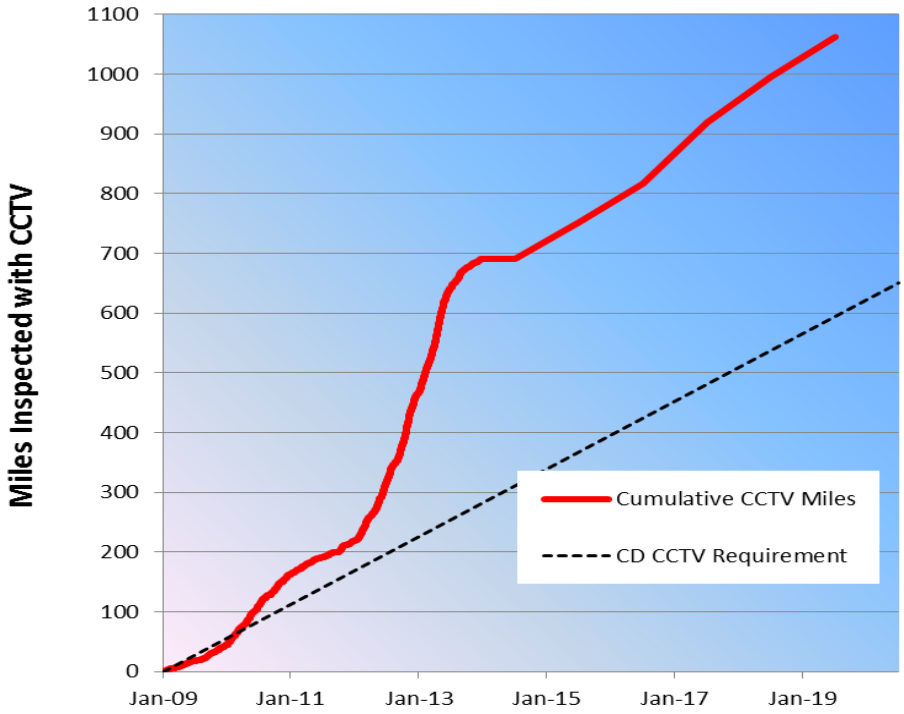


Figure 1. CCTV Inspection Miles through June 30, 2019

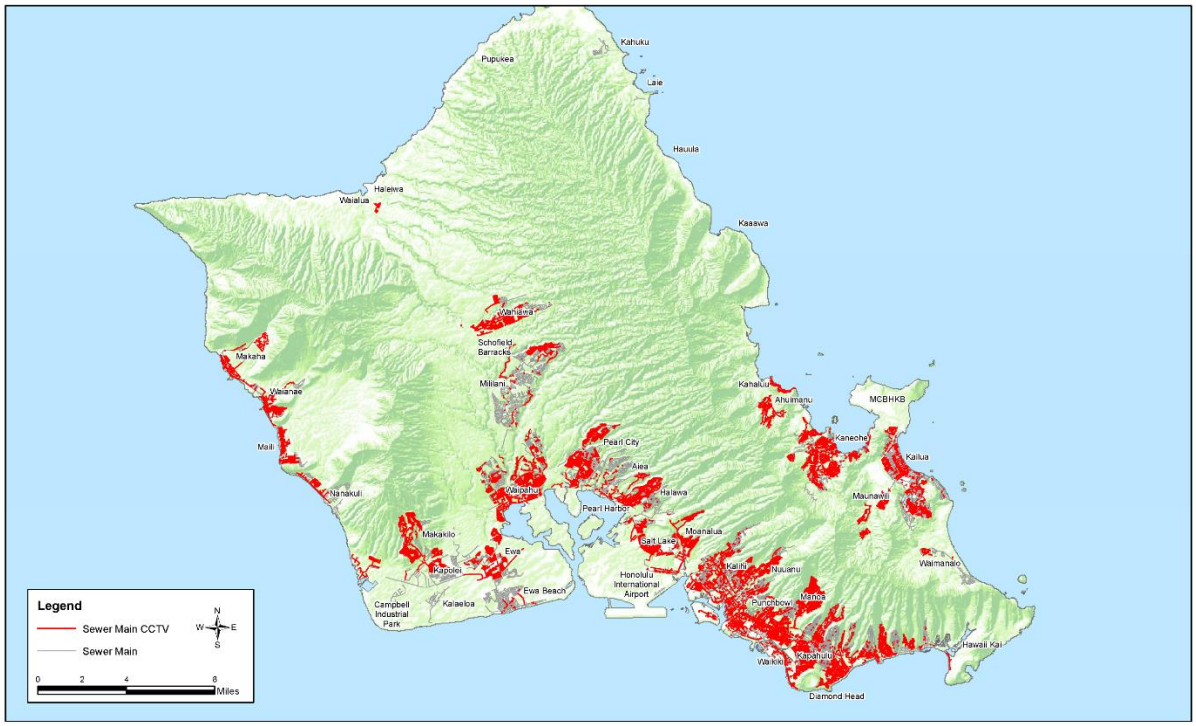
Table 56. Gravity Main Condition Assessment Requirements

Requirement	Due Date	Status
Gravity Main Condition Assessment - First 300 Miles	12/17/2013	300 miles of inspection completed through Year Three.
Gravity Main Condition Assessment - Second 350 Miles	6/30/2020	1,062 miles of inspection completed through Year Nine.

Figure 2 shows the pipe segments that have been inspected using CCTV since January 1, 2009.

Gravity Sewer Condition Assessment (January 1, 2009 through June 30, 2019)

FIGURE 2



J. Gravity Main Rehabilitation and Replacement Program (Paragraph 20)

CCH has completed the gravity main rehabilitation and replacement projects identified in CD Appendix H, with the exception of a few segments that have been documented and communicated to EPA/DOH. CCH has also completed work on other projects that allow additional miles of rehabilitation and replacement to be banked towards meeting the requirements of Years Four through Ten.

Rehabilitation and Replacement Plan (Paragraph 20.b)

Table 57. Rehabilitation and Replacement Plan

Requirement	Due Date	Status
Rehabilitation and Replacement Plan	12/13/2013	CCH submitted Plan to EPA/DOH on 12/13/2013. On 4/2/2014 EPA returned comments for CCH to address and resubmit Plan by 6/16/2014. On 5/29/2014 CCH submitted the revised Plan to EPA/DOH. On 8/27/2014 EPA approved the Revised Gravity Sewer Main Rehabilitation and Replacement Plan.

Rehabilitation and Replacement Program for Years One through Three (Paragraph 20.c)

CD Appendix H specifies a set of rehabilitation and replacement projects completed by the end of Year Three. These projects include portions of new sewer (newly constructed gravity main) and rehab sewer (gravity main that has been rehabilitated through a point repair or through the installation of an internal liner). CD Appendix H includes the estimated number of miles of new and rehabilitated sewer associated with each project. In some cases, the actual mileage varied because of changes encountered during the construction process. The actual miles of new and rehabilitated sewer are reported in the Table below.

Table 58. Appendix H Requirements

Requirement	DDC Serial Number	CD New Miles	CD Rehab Miles	Actual New Miles	Actual Rehab Miles	Status
Alii Shores Structural Rehabilitation	03-0414	0	0.4335	0	0.4134	Construction completed 1/9/2009.
Amelia Street Relief Sewer	05-0980	0.2697	0	0.2002	0	Construction completed 12/19/2010. * See Note 3 below.
Fort Weaver Road Manhole and Pipe Rehabilitation	03-0415	0.1498	0.8379	0.1498	0.9534	Construction completed 12/19/2007.
Halona Street Relief Sewer, Kalihi	02-1300	0.4545	0.3902	0.4438	0.5057	Construction completed 4/21/2009.
Houghtailing Street Area Sewer (SI-CS-06, SCIP 25, SMPR 25)	04-1144	0.5515	3.7519			Construction completed 8/16/2012.
Ilimalia Loop Mokapu Blvd Reconstructed Sewer	00-0534	0	0.5714	0	0.5606	Construction completed 8/7/2008.
Kailua/Kaneohe Sewer Rehabilitation - Ph 1 (KK-CS-09 portion, KK-CS-16 portion)	03-0418	0.0816	2.189	0.0218	2.1716	Construction completed 10/22/2010. * See Note 2 below.
Kailuana Place Sewer Rehabilitation (SMPR 64)	02-1659	0.0227	0.9205	0	0.9426	Construction completed 3/27/2008.

Requirement	DDC Serial Number	CD New Miles	CD Rehab Miles	Actual New Miles	Actual Rehab Miles	Status
Kalaheo Ave / Mokapu Road / Aikahi Loop Sewer Rehab (KK-ZZ-02 Portion)	06-0083	0	0.6439	0	0.64	Construction completed 2/22/2010.
Kalakaua Ave Sewer Rehabilitation - Kalakaua Ave portion (SMPR 27 portion)	02-1656	0.2775	0			Construction completed 4/19/2012.
Kalihi Valley Reconstructed Sewer (SI-CS-05 portion, SCIP 14 portion)	00-0550	0.268	0	0.2587	0	Construction completed 7/7/2010.
Kalihi/Nuuanu Area Sewer Rehabilitation Phase 1A [Area 2A - Middle Kalihi]	06-0086	1.5795	0	1.55	0	Construction completed 4/1/2011.
Kalihi/Nuuanu Area Sewer Rehabilitation Phase 1B [Area 2B - Middle Kalihi]	08-0328	0.7917	0	0.74	0	Construction completed 4/1/2011.
Kalihi/Nuuanu Area Sewer Rehabilitation Phase 1C [Area 3 - Upper Kalihi]	08-0329	1.072	0	1.03	0	Construction completed 4/1/2011.

Requirement	DDC Serial Number	CD New Miles	CD Rehab Miles	Actual New Miles	Actual Rehab Miles	Status
Kalihi/Nuuanu Area Sewer Rehabilitation Phase 1D [Area 4, 7, & 8 - Lanakila, Punchbowl South and Pacific Hts]	08-0330	0.2481	0	0.25	0	Construction completed 11/17/2010.
Kalihi/Nuuanu Area Sewer Rehabilitation Phase 1E [Area 5A - Lower Nuuanu]	08-0331	0.3144	0	0.33	0	Construction completed 9/10/2009.
Kalihi/Nuuanu Area Sewer Rehabilitation Phase 1F [Area 5B - Lower Nuuanu]	08-0332	0.3314	0	0.343	0	Construction completed 1/30/2009.
Kalihi/Nuuanu Area Sewer Rehabilitation Phase 1G [Area 5C - Lower Nuuanu]	08-0333	0.5966	0	0.63	0	Construction completed 11/20/2009.
Kalihi/Nuuanu Area Sewer Rehabilitation Phase 1H [Area 6 - Punchbowl North]	08-0334	0.392	0	0.4913	0	Construction completed 1/30/2009.
Kalihi/Nuuanu Area Sewer Rehabilitation Phase 1I [Area 9 - Upper Nuuanu]	08-0335	0.2936	0	0.3487	0	Construction completed 2/13/2009.

Requirement	DDC Serial Number	CD New Miles	CD Rehab Miles	Actual New Miles	Actual Rehab Miles	Status
Kaneohe Bay Drive Trunk Sewer Reconstruction	02-1286	0.3466	0.2633	0.3223	0.2059	Construction completed 8/26/2010.
Kapiolani Area Revised Sewer System (SCIP 16 portion, SCIP 26 portion, SMPR 12, SMPR 16)	00-0559	0.5244	0.3485	0.52	0.35	Construction completed 10/29/2009.
Kuliouou Sewer Rehabilitation and WWPS Modifications - Sewer Rehabilitation (SMPR 36 portion)	00-0561	0.2212	2.9892	0.12	2.98	Construction completed 4/22/2009.
Peterson Lane (SMPR 92, SMPR 73 p) and Pua Lane (SMPR 93) Sewer Rehabilitation	05-0457	0.7235	0.107	0.72	0.11	Construction completed 9/15/2009.
Renton Road Sewer and Manhole Rehabilitation	03-0427	0	2.3616	0	2.36	Construction completed 8/26/2009.
Saint Louis Heights Sewer Rehabilitation (SCIP 04, SMPR 39, SI-CS-31)	02-1284	0.092	8.8733			Construction completed 3/8/2013.
Sand Island Basin Miscellaneous Sewer Rehabilitation, Phase 1 (SI-CS-63A, SI-CS-63B)	02-1301	0	0.3402	0	0.34	Construction completed 12/30/2008. * See Note 1 below.

Requirement	DDC Serial Number	CD New Miles	CD Rehab Miles	Actual New Miles	Actual Rehab Miles	Status
Sewer Manhole & Pipe Rehabilitation At Various Locations - Ph I	04-1994	0	0.0407	0	0.05	Construction completed 4/29/2009. * See Note 3 below.
Waimalu Sewer Rehabilitation Ph 1, 7D01C	02-1299	1.1761	0			Construction completed 6/30/2011.
Waimanalo Sewer Rehabilitation	03-0439	0.339	0	0.3411	0	Construction completed 12/16/2009.
Waipahu Street/Plantation Village Sewer Reconstruction (SCIP 24, SMPR 26)	02-1287	0.3985	0	0.44	0	Construction completed 4/30/2011.
Wanaao Road/Keolu Drive Reconstructed Sewer (KK-CS-07, KK-ZZ-03)	02-1557	1.6746	0	1.571	0	Construction completed 7/26/2010.
Wilhelmina Rise Sewer Rehabilitation (SCIP 01)	00-0607	0.0644	8.161			Construction completed 1/11/2012.
Ala Moana and Kapiolani Trunk Sewer Replace/Rehabilitation, Phase 1B, 1C, 1D - Kapiolani Blvd Water and Sewer System Improvements	00-0516	0.2614	0.9848	0.48	0.98	Construction completed 10/29/2009.

Requirement	DDC Serial Number	CD New Miles	CD Rehab Miles	Actual New Miles	Actual Rehab Miles	Status
Beretania Street 1617 (SUB 7736, McCully) FY08-12-20	08-0459	0	0.1138	0	0.1114	Construction completed 11/12/2008.
Foster Village (Aliamanu) FY08-02-24	09-0135	0	2.2104	0	2.1795	Construction completed 9/13/2010.
Halekoa Drive 1509 (SUB 5254, Waialae) FY08-09-06	08-0402	0	0.1141	0	0.1142	Construction completed 1/24/2008.
Houghtailing, Area 1 (Liliha) FY07-10-01	08-0397	0	0.3379	0	0.3138	Construction completed 9/18/2008.
Houghtailing, Area 2 (Liliha) FY07-10-01	09-0039	0	0.6489			Construction completed 5/23/2008.
Houghtailing, Area 3 (Liliha) FY07-10-01	08-0398	0	0.9715			Construction completed 2/21/2011. * See Note 1 below.
Kahala /Pilialoha Place 1687 (Moanalua) FY09-11-17	08-0982	0	0.1269	0	0.1256	Construction completed 4/7/2009.
Kahala Avenue 4783 (SUB 5281, 5285, Waialae) FY07-05-29	05-0278	0	0.2798	0	0.2737	Construction completed 7/19/2010.
Kalihi Valley, Area 1 (Kalihi) FY 07-09-24	08-0396	0	1.2896			Construction completed 5/18/2012. * See Note 3 below.

Requirement	DDC Serial Number	CD New Miles	CD Rehab Miles	Actual New Miles	Actual Rehab Miles	Status
Kalihi Valley, Area 2 (Kalihi) FY 07-09-24	09-0040	0	0.5632			Construction completed 11/25/2008.
Kalihi Valley, Area 3 (Kalihi) FY 07-09-24	09-0041	0	1.0969	0	1.0754	Construction completed 7/21/2010.
Kalihi Valley, Area 4 (Kalihi) FY 07-09-24	09-0042	0	0.7713			Construction completed 1/19/2010. * See Note 3 below.
Kalihi-Nuuanu, Area 1 FY07-07-20	08-0285	0	0.0571	0	0.0571	Construction completed 2/28/2008.
Kalihi-Nuuanu, Area 2.1 FY07-07-20	08-0297	0	0.2965			Construction completed 3/15/2010.
Kalihi-Nuuanu, Area 2.3 FY07-07-20	08-0297	0	0.3138			Construction completed 8/31/2010.
Kalihi-Nuuanu, Area 2.4 FY07-07-20	08-0297	0	0.2449			Construction completed 4/7/2010.
Kalihi-Nuuanu, Area 2.5 FY07-07-20	08-0285	0	0.0761	0	0.0761	Construction completed 4/1/2011.
Kalihi-Nuuanu, Area 3.1 FY07-07-27	08-0285	0	0.2185	0	0.2185	Construction completed 4/1/2011.
Kalihi-Nuuanu, Area 3.3 FY07-07-27	08-0297	0	0.433			Construction completed 6/10/2010. * See Note 3 below.
Kalihi-Nuuanu, Area 3.4 FY07-07-27	08-0297	0	0.2373			Construction completed 8/26/2010. * See Note 3 below.

Requirement	DDC Serial Number	CD New Miles	CD Rehab Miles	Actual New Miles	Actual Rehab Miles	Status
Kalihi-Nuuanu, Area 3.5 FY07-07-27	08-0285	0	0.0462	0	0.0462	Construction completed 9/11/2008.
Kalihi-Nuuanu, Area 4.1 FY07-07-31	08-0285	0	0.2784	0	0.2784	Construction completed 6/4/2010.
Kalihi-Nuuanu, Area 4.2 FY07-07-31	08-0285	0	0.3083			Construction completed 9/12/2008.
Kalihi-Nuuanu, Area 4.3 FY07-07-31	08-0285	0	0.2348	0	0.2348	Construction completed on 9/12/2008
Kalihi-Nuuanu, Area 5.3 FY07-08-01	08-0297	0	0.2213			Construction completed on 1/19/2010. * See Note 3 below.
Kalihi-Nuuanu, Area 6.2 FY07-08-01	08-0297	0	0.1786			Construction completed on 3/23/2010. * See Note 3 below.
Kalihi-Nuuanu, Area 6.4 FY07-08-01	08-0297	0	0.1443			Construction completed on 11/30/2009.
Kalihi-Nuuanu, Area 7.2 FY07-08-06	08-0297	0	0.2856			Construction completed on 8/4/2009. * See Note 3 below.

Requirement	DDC Serial Number	CD New Miles	CD Rehab Miles	Actual New Miles	Actual Rehab Miles	Status
Kaneohe Bay Drive 44-505 (SUB 4267, 4268, 4270, 4271, Kaneohe) FY07-05-17	08-0222	0	0.2978	0	0.2924	Construction completed on 6/27/2008.
Kaneohe Bay Drive Trunk Sewer, Sewerline B (Kaneohe) FY07-09-13	08-0394	0	0.3039	0	0.2928	Construction completed on 2/16/2009.
Kilani Avenue 211, Illima Street 91 (SUB W186, Wahiawa) FY08-01-02	08-0460	0	0.0909	0	0.0907	Construction completed on 8/20/2008.
Komo Mai Drive 1860 (SUB 2094, 2095, Pearl City) FY08-06-13	08-0462	0	0.2708	0	0.2555	Construction completed on 1/16/2009.
Leighton Street 815 (SUB 5114, 5116, Kuliouou) FY08-06-18	08-0210	0	0.2561	0	0.2528	Construction completed on 8/14/2009.
Makalii Place 350, Kailua Road (SUB 4612, 4661, Kailua) FY07-05-17	08-0223	0	0.2129	0	0.2021	Construction completed on 6/27/2008.
Mikiola Drive /Alakai Street / Likeke Place (Kaneohe) FY-07-09-28	08-0395	0	0.4053	0	0.3973	Construction completed on 5/12/2010.
Mulehu Street 94-436 (SUB 0446, Mililani) FY09-09-30	08-0981	0	0.0396	0	0.0398	Construction completed on 10/7/2009.

Requirement	DDC Serial Number	CD New Miles	CD Rehab Miles	Actual New Miles	Actual Rehab Miles	Status
Nanamoana Street 44-121 (SUB 3994, Kaneohe) FY07-06-06	08-0260	0	0.0212	0	0.0373	Construction completed on 12/13/2007.
Waialae Iki, Area 4 (Kuliouou) FY07-11-15	08-0408	0	0.5375	0	0.5006	Construction completed on 3/5/2009.
Waialae Iki, Area 5 (Kuliouou) FY07-11-15	09-0043	0	0.2962	0	0.2953	Construction completed on 2/17/2010.
Waialae Iki, Area 6 (Kuliouou) FY07-11-15	09-0044	0	0.2786	0	0.2544	Construction completed on 3/24/2010.
Waimalu Sewer Rehabilitation (Aiea) FY09-06-29	09-0653	0	0.4561	0	0.4509	Construction completed on 10/1/2009.
Waimanalo Sewers (SUB HAWN, PRIV, 2017, 2013, Waimanalo) FY07-10-05	08-0403	0	0.3705	0	0.3604	Construction completed on 12/6/2008.
Waipahu Depot Street, Farrington Highway (SUB 0887, Waipahu) FY09-09-30	08-0980	0	0.0145	0	0.0138	Construction completed on 3/11/2009.

1. This project was determined to be in good condition and is complete for purposes of Paragraph 20.c.
2. This project was determined to be completed at a reconfigured length and is completed for purposes of Paragraph 20.c.
3. A portion of this project is included in the 0.35 miles of pipe that was re-evaluated by CCH as part of the Kalihi-Nuuanu project on December 31, 2016.

Implementation of RR Plan for Gravity Mains (Paragraph 20.d)

CCH has implemented the RR Plan as approved to complete 144 miles as required. In Years Four through Ten, the City completed the following mileage:

Table 59. Rehabilitation and Replacement Miles – Years Four through Ten

Consent Decree Year	RR Miles Required	Rehabbed Miles	Banked Miles Used	Banked Miles Year End Balance
Year Three	-	-	-	31.21
Year Four	11.5	15.22	0	34.92
Year Five	11.5	18.7	0	42.1
Year Six	11.5	10.9	0.6	41.5
Year Seven	11.5	10	1.5	40.0
Year Eight	11.5	10.8 3	0.7	39.33
Year Nine	11.5	9.9	1.6	37.7
Year Ten	12			

Banking of Excess Miles (Paragraph 20.e)

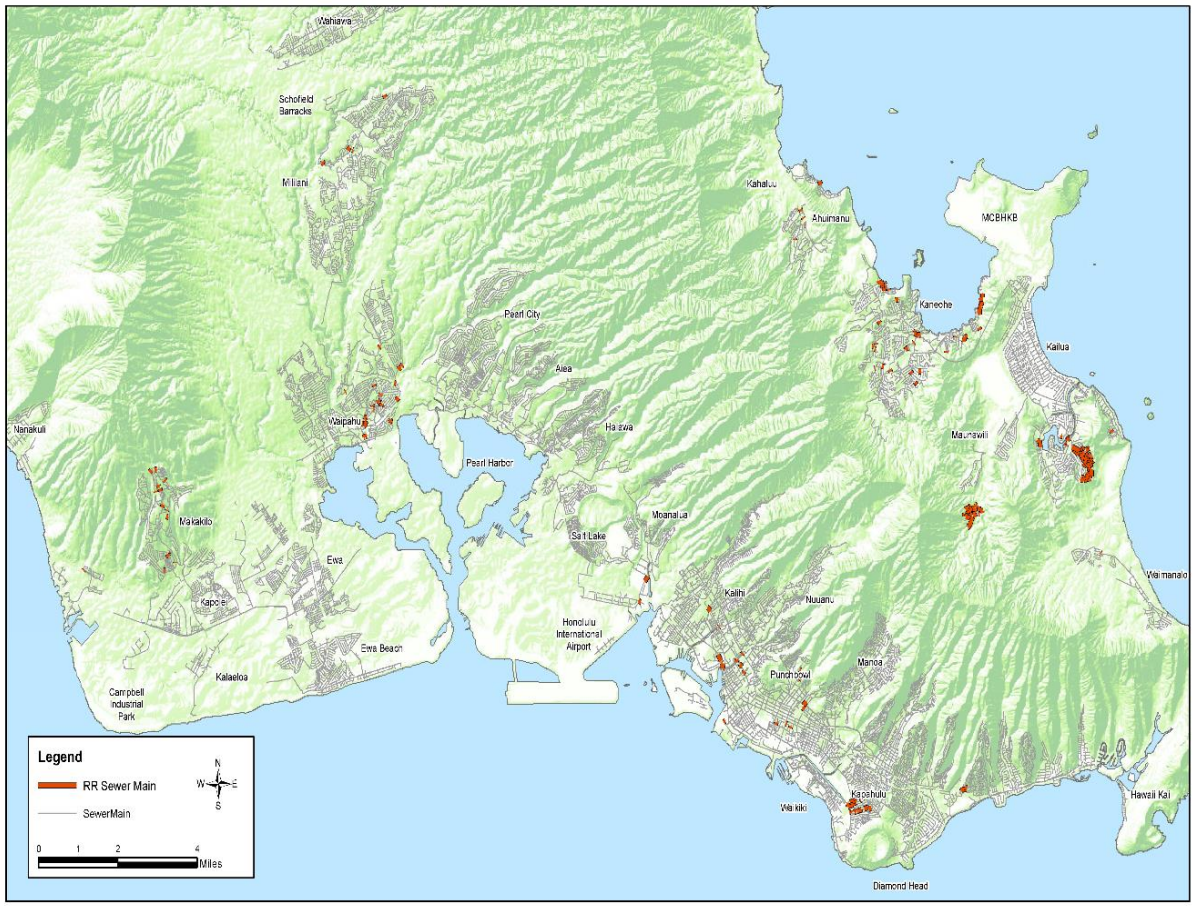
CCH maintains a database of sewer segments addressed through rehabilitation and replacement projects. A report from this database is shown in Attachment A. For projects that are not identified in the CD's Appendix H, CCH is allowed under CD Paragraph 20.e to bank the additional miles of gravity main sewer addressed through rehabilitation and replacement projects. Banked miles can then be used towards meeting the requirements of Years Four through 10.

Table 60. Banked RR Miles

Date	Banked Miles	Applied Miles	Year End Balance
Year Three	31.2	0	31.21
Year Four	3.7	0	34.92
Year Five	7.2	0	42.1
Year Six	0	0.6	41.5
Year Seven	0	1 .5	40.0
Year Eight	0	0.7	39.3 3
Year Nine	0	1.6	37.7
Year Ten			

1. Previously, 32.5 miles were reported as banked; however, duplicate entries were identified and removed. Once all the duplicate data were removed, there were a total of 31.2 miles of rehabilitated pipe banked at the end of year three.
2. Previously, 38.1 miles were reported; however, duplicate entries were identified and removed. Once all the duplicate data were removed, there were a total of 34.9 miles banked at the end of year four.
3. Updated due to late entries into database.

Figure 3 shows the specific sewer segments identified in Attachment



A.

FIGURE 3 - Rehabilitation and Replacement Pipe Segments (July 1, 2018-June 30, 2019)

K. Gravity Main Cleaning and Maintenance Program (Paragraph 22)

Gravity Sewer Cleaning (Paragraph 22.a)

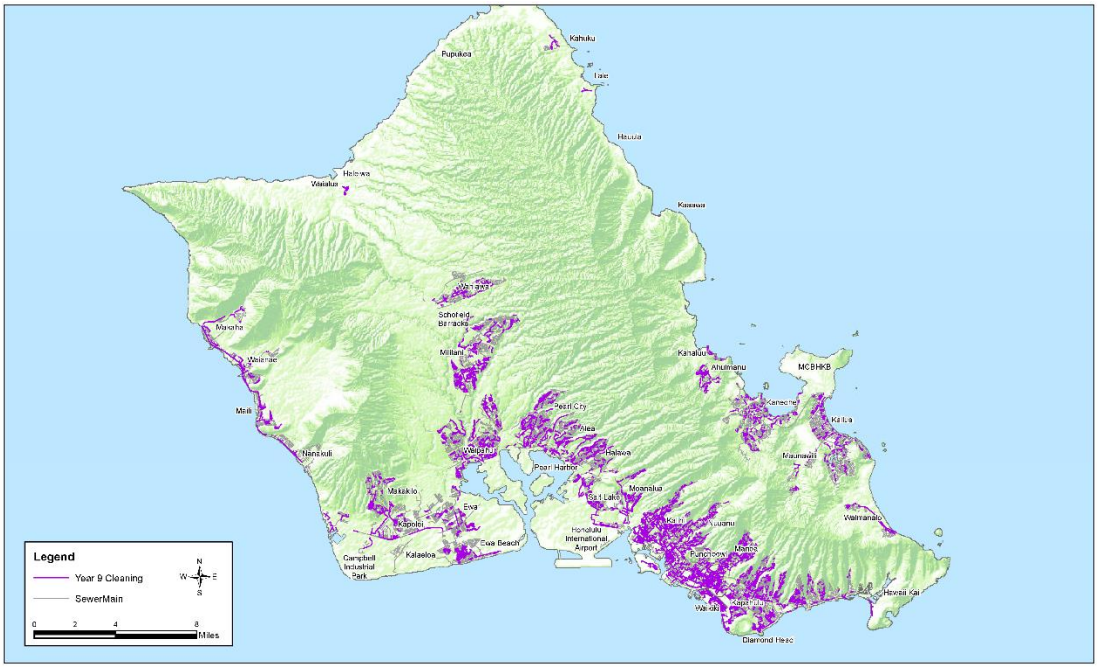
Table 61. Gravity Sewer Cleaning

Requirement	Annual Performance Requirement	Status
Gravity Main Cleaning Program	500 miles of cleaning; 300 miles of unique cleaning	Completed for Year Nine: 685 miles of cleaning (flushing or rodding) 539 miles of unique cleaning.

Figure 4 shows the pipes included in the gravity sewer cleaning program for Year Nine.

Gravity Sewer Cleaning (July 1, 2018 through June 30, 2019)

FIGURE 4



Chemical Root Control (Paragraph 22.b)

The root control process included mechanical root cleaning followed by chemical root treatment. CCH will monitor the effectiveness of the root treatment to help determine the future of the root control program.

Table 62. Chemical Root Control Requirements

Requirement	Due Date	Status
Gravity Main Cleaning and Maintenance Program - Root Control Work 15 Miles per Year One	6/30/2011	Complete for Year One: 15.4 miles of root treatment.
Gravity Main Cleaning and Maintenance Program - Root Control Work 15 Miles per Year Two	6/30/2012	Complete for Year Two: 18.43 miles of root treatment.
Gravity Main Cleaning and Maintenance Program - Root Control annually	6/30/2013	Complete for Year Three: 10.2 miles of root treatment.
Gravity Main Cleaning and Maintenance Program - Meeting to Discuss Future Root Control	5/31/2013	Root Control Analysis and Future Cleaning & Maintenance plans were presented to EPA and DOH on 5/22/2013.
Gravity Main Cleaning and Maintenance Program - Root Control annually	6/30/2014	Complete for Year Four: 4.63 miles of root treatment.
Gravity Main Cleaning and Maintenance Program - Root Control annually	6/30/2015	Complete for Year Five: 8.64 miles of root treatment.

Requirement	Due Date	Status
Gravity Main Cleaning and Maintenance Program - Root Control annually	6/30/2016	Complete for Year Six: 7.68 miles of root treatment.
Gravity Main Cleaning and Maintenance Program - Root Control annually	6/30/2017	Complete for Year Seven: 7.39 miles of root treatment.
Gravity Main Cleaning and Maintenance Program - Root Control annually	6/30/2018	Complete for Year Eight: 8.03 miles of root treatment.
Gravity Main Cleaning and Maintenance Program - Root Control annually	6/30/2019	Complete for Year Nine: 6.35 miles of root treatment.

L. Commercial Fats, Oils, and Grease ("FOG") Control Program (Paragraph 23)

CCH continues its FOG Control Program to conduct inspections, enforce existing regulations, and maintain databases of enforcement activity as required by the CD.

- General Requirements (Paragraph 23.a)
- No Discharge without Permit (Paragraph 23.a.i)
- CCH continues to prohibit Food Service Establishments (FSE) from discharging into its wastewater system without a permit issued under the CCH Ordinances and Rules Relating to Grease Interceptor Program Compliance.
- Annual Inspections (Paragraph 23.a.ii)

CCH continues to perform:

Annual inspections of Grease Removal Devices (GRDs), previously in compliance with Grease Interceptor Rules (including sizing criteria); and Semi-annual inspection of all other GRDs (those not in compliance with the Grease Interceptor rules, including sizing criteria).

Physical inspections include coring the GRD to document compliance to the FOG Control Program and Grease Interceptor Rules, and reviewing maintenance logs and compliance with bar coding requirements.

During Year Nine CCH performed 3,742 inspections of GRDs.

Special Investigations (Paragraph 23.a.iii)

CCH continues to perform special investigations of potential FOG sources that may have caused or contributed to a FOG-related SSO or triggered an Environmental Incident Report. CCH issues formal Enforcement Orders within 60 days following completion of the special investigation for those FSEs identified to be the source of the FOG problem. Enforcement Orders require the establishment owner of the FOG problem to:

Come into full compliance with CCH's Grease Interceptor Rules; or

Cease operations in accordance with a CCH-approved compliance schedule.

During Year Nine, CCH performed 9 special investigations related to FOG. These investigations led to enforcement actions or public education in residential areas, as appropriate.

Enforcement (Paragraph 23.a.iv)

CCH issues appropriate enforcement action(s) to FSEs not in compliance with the Grease Interceptor Rules in accordance with the Enforcement Response Plan. The enforcement action may require a FSE to: Replace existing GRD with a CCH-approved GRD per Grease Interceptor Rules; or Cease operations in accordance with a CCH-approved compliance schedule.

During Year Nine, CCH issued approximately 256 enforcement actions related to FOG. These actions included Wastewater Discharge Orders, Warning Letters, and Notice of Violations (NOVs). In Year Nine, CCH issued 3 NOVs and is continuing to escalate enforcement against those permit holders who have not been brought into compliance.

DOH New Business Licenses (Paragraph 23.a.vi)

Based on information from the DOH license lists, building permits, and other sources, CCH issued approximately 145 new permits during Year Nine to control FOG discharge into the collection system.

Program Manual (Paragraph 23.b)

CCH provided its Commercial FOG Control Program Manual to EPA and DOH on June 15, 2011 in accordance with the CD. The Manual describes all aspects of the FOG Control Program as set forth in the CD.

M. Pump Station Projects (Paragraph 24)

Beachwalk WWPS Condition Assessment (Paragraph 24.a)

CCH is proceeding with improvements at the Beachwalk WWPS that were identified as follow-up items from the previously completed condition assessment report dated January 14, 2011.

Table 63. Beachwalk WWPS Condition Assessment

Requirement	DDC Serial Number	Compliance Milestone	Status
Beachwalk WWPS Condition Assessment Follow-Up - Repair Wet Well	08-0730	Construction NTP: 01/03/2011; Complete Construction: 12/31/2012	Construction NTP issued 10/11/2010. Construction completed 12/26/2012.
Beachwalk WWPS Condition Assessment Follow-Up - Replace Variable Speed Controls	08-0730	Construction NTP: 01/03/2011; Complete Construction: 12/31/2012	Completed 12/26/2012.

Requirement	DDC Serial Number	Compliance Milestone	Status
Beachwalk WWPS Condition Assessment Follow-Up - Repair Roof	08-0730	Complete Construction: 12/31/2012	Completed 12/26/2012.
Beachwalk WWPS Condition Assessment Follow-Up - Replace Level Control	08-0730	Complete Construction: 12/31/2012	Completed 12/26/2012.

Beachwalk Pump Station Upgrade (Paragraph 24.b)

CCH submitted a letter to EPA/DOH dated 8/21/2013 confirming that CCH satisfied this requirement by completing construction of improvements to the Beachwalk Wastewater Pump Station and force main system to increase the station's pumping capacity.

Fort DeRussy Pump Station Upgrade (Paragraph 24.c)

CCH submitted a letter to EPA/DOH dated 8/29/2014 confirming that CCH satisfied this requirement by completing construction improvements to the Fort DeRussy Wastewater Pump Station and force main system to increase the station's pumping capacity.

Waimalu Pump Station Controller Upgrade (Paragraph 24.d)

CCH completed replacement of the controllers at the Waimalu Pump Station. The work was completed in 6/2010, before the CD completion deadline of 11/30/2010.

Wet Weather Storage (Paragraph 24.e)

Equipment and procedures are in place to use existing storage at the Kaneohe PTF and the Ahuimanu PTF during wet weather events. The available storage volume is approximately 1.4 million gallons at the Kaneohe PTF and 600,000 gallons at the Ahuimanu PTF. As required by the CD, this storage volume is being used to reduce capacity-related overflows during wet

weather events. CCH has calculated and documented the available storage volume in the existing structures and prepared flow schematics for each facility. No storage was used during Year Nine rainfall events. Beneficial use of Kaneohe-Kailua Sewer Tunnel operation began on June 12, 2018.

CCH has taken steps to decrease response time during wet weather events/spills and maximize the use of storage at the Kaneohe PTF and the Ahuimanu PTF, including:

For Kaneohe PTF:

- Replaced Unit 7 portable pump with another portable pump to increase pumping capacity to the storage tanks
- Installed automatic start switches for Unit 7 and Unit 8 flow diversion equipment
- Installed an automatic switch for Unit 8 portable pump
- Set the appropriate float height in the wet well of the Old Kawa Pump Station
- Set the on/off logic for the portable pumps

For Ahuimanu PTF:

- Replaced pumps at the Old Final Clarifier storage tank, to pump from the Old Final Clarifier storage tank to the Old Digester storage tank automatically. Previously, pumping from one tank to the other was done manually.
- Pump Station Overflow Structures (Paragraph 24.f)
- CCH announced an update of its design standards to suspend sections related to overflow structures in a letter dated 3/11/2009, to all design consultants in CCH's consultant database and posted the letter on its website. The letter suspended the sections of the design standards that referred to designed overflow structures.

Table 64. Pump Station Overflow Structure Requirements

Requirement	Due Date	Status
WWPS Overflow Structures Design Standards Update (i)	12/17/2010	Completed. Letter issued 3/11/2009.
WWPS Overflow Structures Closure Report (ii)	12/17/2011	CCH submitted the WWPS Overflow Structures Closure Report on 12/16/2011. EPA and DOH approved the Report on 2/13/2012.
WWPS Overflow Structures Closure Project (iii)	2/13/2013	All work was completed prior to 2/13/2013.

Pump Station Operation and Maintenance Manuals (Paragraph 24.g)

CCH reviewed and updated, as necessary, the pump station O&M manuals by December 17, 2012.

Pump Station Operations Training (Paragraph 24.h)

Table 65. Pump Station Operations Training

Requirement	Due Date	Status
WWPS Standard Training Procedures Including SCPs	12/17/2011	Training procedures and materials were completed and are available for use as needed.
WWPS Training Certification for Maintenance Staff	12/17/2012	Pump Station training was completed 11/1/2011. Force Main SCP training was completed on 6/15/2012.

N. Sewer Laterals (Paragraph 25)

Inventory of Lower Laterals (Paragraph 25.a)

CCH maintains a database of lower laterals in its Geographic Information System (GIS). The CCH GIS database contains a current and complete inventory of lower laterals and is updated when new lateral information becomes available.

Problem Lower Laterals (Paragraph 25.b)

CCH keeps a list of lower laterals with known issues that require maintenance in the CSM computerized maintenance management system database. CSM maintains a database of all reported problem lower laterals, and the appropriate corrective action (repair, replacement or maintenance) to address the lateral issue is assigned. Once identified, the corrective action for such lateral is completed within two years. Attachment B includes a summary of the problem laterals addressed in Year Nine.

Reporting of Lower Lateral Issues (Paragraph 25.c)

CSM staff report lower lateral issues observed during fieldwork and complete the appropriate corrective action within 60 days when a lower lateral contributes to an SSO. All CSM staff and contractors have been reminded to report any lateral issues observed during fieldwork.

Construction drawing notes also remind CCH contractors to report lateral problems encountered in the field to the sewer trouble call number (808) 768-7272.

Corrective Action within 60 Days (Paragraph 25.d)

CSM conducts corrective action (repair, replacement, or maintenance) within 60 days if a lower lateral causes or contributes to an SSO. Attachment B summarizes the laterals addressed in Year Nine.

Clean-out Cap Replacement Program (Paragraph 25.e)

The Cleanout Cap Replacement Program is currently in place and is continued as part of the smoke testing procedures. CSM records the number of clean-out caps it replaces and maintains the record for at least five years.

Building Inspection Materials and Follow-up (Paragraph 25.f)

CCH has developed materials for building inspectors with the DPP to assist in identifying illegal connections to the sanitary sewer system. These materials were disseminated before March 17, 2011 (90 days after the CD effective date).

When an inspection identifies an illegal connection, the DPP inspector informs the Regulatory Control Branch (RC) of ENV. CCH sends a Notice (return receipt requested) to the property owner of record indicating that corrective action, including certification of repair, must be taken within six months. RC maintains the records of this correspondence and repair certifications for at least five years.

Smoke Testing and Follow-up (Paragraph 25.g)

As an annual performance requirement, CCH is to perform smoke testing on at least 19 miles of gravity sewers (mains and lower laterals) per year. During Year Nine, CCH performed smoke testing using in-house crews. The testing covered 16.55 miles of gravity mains and 5.82 miles of lower laterals, for a total of 22.37 miles. CCH recorded the sewer assets and dates of testing in its computerized maintenance management system and will retain the information for at least five years.

When smoke testing indicates an improper connection, CSM forwards the case to RC which issues a notice to the responsible party requiring them to:

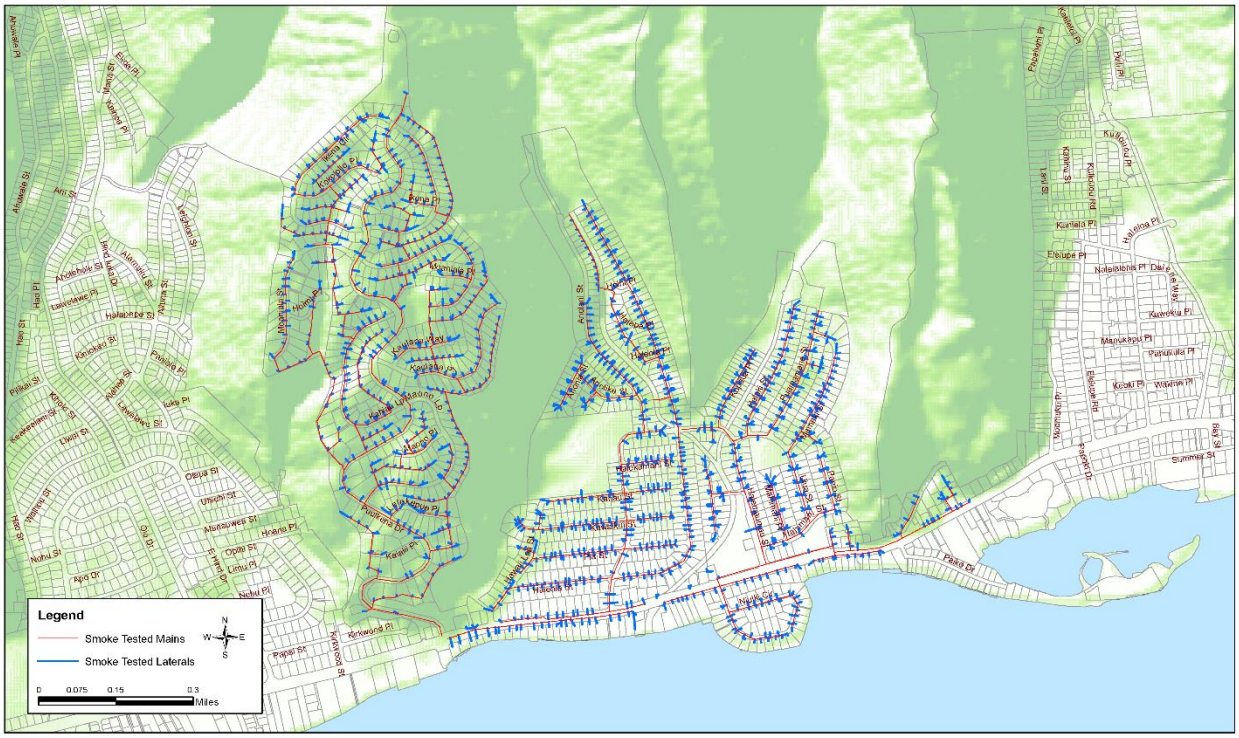
Take corrective action to eliminate the improper connection within 6 months after receipt of notification, and

Provide certification of completion of the required corrective action.

RC maintains all records to this effect in RC database for at least five years.

During Year Nine, CCH identified 1 improper connection through the smoke testing program. There were a total of 59 violations (this includes broken pipe, missing vent pipe, broken cleanout).

Figure 5 shows areas of smoke testing performed in Year Nine.



O. Staffing Commitments (Paragraph 26)

CCH implemented the approved staffing plan dated 2/2011.

Table 66. Staffing Commitments

Requirement	Due Date	Status
Collection System Staffing: Revised Staffing Plan Report	2/15/2011	EPA and DOH approval received 7/5/2011.
Collection System Staffing: Maintain 90% of Required Staffing Level annually	1/1/2019	For calendar year 2018, CCH maintained or exceeded the required staffing level of 90% Collection System Staffing with 26 non-field positions (including 6 full time equivalents provided through contractor support) and 133 field positions (including 32 full-time equivalents provided through contractor support).

P. Equipment Commitments (Paragraph 27)

CCH had the required equipment under Appendix J by 6/17/2014, in accordance with CD Paragraph 27.b. CCH continues to maintain the equipment in good working order and has access to contractor vehicles as needed. Table 67 provides the number of equipment in CCH's inventory as of June 30, 2019.

Table 67. Equipment Commitments

Requirement	Required Number	Status
Vactors	10	CSM currently has 18 vactors.
Cesspool Trucks	5	CSM currently has 9 cesspool trucks.

Requirement	Required Number	Status
Rodders	8	CSM currently has 19 junior rodders and one rodding machine.
CCTV Vans	4	CSM currently has 4 CCTV vans.
Tankers (within WTD)	4	WTD currently has 6 tankers.

Q. Odor Issues (Paragraph 28)

CCH continues to publicize its odor complaint hotline (808) 768-7272 and maintains records of trouble calls in its maintenance management system for at least five years.

CCH publishes the Trouble Hotline telephone number on its external web site and in its local telephone directory. All calls related to odors are tracked in the CSM computerized maintenance management system (CMMS). Follow-up and/or resolution for each complaint is also tracked in the database system. During Year Nine, CCH received and investigated approximately 74 odor complaints. CCH investigated each complaint and took appropriate follow-up actions as needed. In most cases, the odor could not be identified as attributable to the wastewater collection system. When a collection system issue was identified, CCH took appropriate actions including applying silicone seal around manhole lids or cleaning the sewer main.

R. Spill Response, Monitoring, and Reporting (Paragraph 29)

CCH submitted the Spill Response, Monitoring and Reporting procedures on 12/14/2011. EPA and DOH approved this Report on 8/14/2013.

S. Honouliuli Wastewater Treatment Plant (Paragraph 30)

CCH has withdrawn its appeal of EPA's denial of a permit for the Honouliuli WWTP. CCH has submitted a NPDES permit application to DOH and is proceeding with facility planning for secondary treatment at the Honouliuli WWTP.

Requirement	Due Date	Compliance Milestone	Status
Honouliuli Wastewater Treatment Plant Secondary Treatment	6/1/2024	Design NTP: 01/01/2017 Construction NTP: 01/01/2019; Complete Construction: 6/1/2024	Design NTP Issued 03/01/2016. Design completed. Bids opened 10/19/2018. Construction NTP was issued on 12/31/2018. Construction in progress.

T. Sand Island Wastewater Treatment Plant (Paragraph 31)

CCH has withdrawn its appeal of EPA's denial of a permit for the Sand Island WWTP. CCH has submitted a NPDES permit application to DOH and is proceeding with facility planning for secondary treatment at the Sand Island WWTP.

Requirement	Due Date		Status
Sand Island Wastewater Treatment Plant Secondary Treatment	12/31/2035	Design NTP: 01/01/2019 Construction NTP: 01/01/2022; Complete Construction: 12/31/2035	Design NTP Issued 12/31/2018. Design in progress.

U. Treatment Plant Interim Effluent Limits (Paragraph 32)

The CD includes interim effluent limits for total suspended solids (TSS) and bio-chemical oxygen demand (BOD) for the Sand Island and Honouliuli treatment plants. Data for these constituents and compliance with these limits are reported in the Discharge Monitoring Report (DMR) provided monthly to EPA and DOH.

V. Treatment Plant Operation and Maintenance (Paragraph 33)

EPA and DOH approved Sand Island Wastewater Treatment Plant Operation and Maintenance Manual on 1/30/2012.

EPA and DOH approved Honouliuli Wastewater Treatment Plant Operation and Maintenance Manual on 1/30/2012.

Attachment A: Segments in Rehabilitation and Replacement Program

The CD paragraph 34.d.iii notes that for the Annual Report:

For each gravity main rehabilitated or replaced, CCH shall provide the following information:

- the pipe identification number;
- whether the pipe was repaired, rehabilitated or replaced;
- the length of the gravity main claimed as credit towards the R/R Plan mileage requirements and the length of repair, rehabilitation or replacement performed;
- the pipe material;
- the diameter of the pipe;
- the original installation date of the gravity main at issue;
- the most recent condition assessment of the gravity main prior to its rehabilitation or replacement; and
- a map depicting the location of each gravity main rehabilitated or replaced.

The following table provides information on the gravity mains proposed for addition to the rehabilitation and replacement bank.

Project ID	Material	SEWERID	Diameter	Length	Installation Date	Activity Type	Activity Date	Activity Feet
1492	UNK	279656	8	116		CCTV/CLEANING	4/30/2019	113.8
1454	TCP	313717	8	147.8		Rehabilitation	4/8/2019	177.9
1457	TCP	357446	6	52		Rehabilitation	7/25/2018	53.8
1457	VCP	357358	8	197		Rehabilitation	7/25/2018	188.9
1457	VCP	357375	8	154		Rehabilitation	7/23/2018	145.9
1457	VCP	383301	8	184.83		Rehabilitation	7/24/2018	183.4
1457	VCP	4029374	10	191		Rehabilitation	7/26/2018	188
1466	TCP	305198	24	82.44		Rehabilitation	5/2/2019	74.9
1466	TCP	305243	24	367		Rehabilitation	4/6/2019	357.6
1466	RCP	305627	24	436		Rehabilitation	5/18/2019	428.2
1466	RCP	305887	24	41		Rehabilitation	4/27/2019	37.3
1466	TCP	4100696	24	265.75		Rehabilitation	4/6/2019	262.2
1466	TCP	4100705	24	116		Rehabilitation	3/23/2019	175.2
1466	TCP	305929	36	70		Rehabilitation	3/16/2019	84.6
1466	TCP	307009	36	27		Rehabilitation	3/16/2019	15.4
1466	VCP	307014	36	247.64		Rehabilitation	3/9/2019	245.9
1471	VCP	462428	8	215		Rehabilitation	7/30/2018	215.8
1471	VCP	462439	8	300		Rehabilitation	7/30/2018	301.3
1471	VCP	462442	8	216		Rehabilitation	7/30/2018	214.5
1475	RCP	240493	48	157.59		Rehabilitation	4/8/2019	153.5
1475	RCP	240559	48	250		Rehabilitation	4/8/2019	235.6
1479	VCP	129367	8	35.2		Rehabilitation	7/17/2018	30.5
1479	VCP	130080	8	300		Rehabilitation	7/12/2018	298.2
1479	VCP	132644	8	113		Rehabilitation	9/10/2018	109.8

1479	VCP	4014848	8	107		Rehabilitation	9/10/2018	107.5
1479	VCP	133836	12	74		Rehabilitation	10/9/2018	71.8
1481	VCP	589511	6	96.74		Rehabilitation	8/29/2018	97.6
1481	VCP	589692	6	106.12		Rehabilitation	8/6/2018	105.7
1481	VCP	589819	6	144.56		Rehabilitation	8/28/2018	145.4
1481	VCP	589900	6	41.74		Rehabilitation	8/28/2018	42
1481	VCP	594477	6	123.76		Rehabilitation	10/16/2018	122.4
1481	VCP	594490	6	26.5		Rehabilitation	10/16/2018	27.6
1481	CAS	618132	6	110		Rehabilitation	12/12/2018	111.1
1481	VCP	590148	8	121		Rehabilitation	7/6/2018	120.2
1481	VCP	590665	8	120		Rehabilitation	12/3/2018	91.9
1481	VCP	590703	8	170		Rehabilitation	11/19/2018	170
1481	VCP	550045	10	171.08		Rehabilitation	7/18/2018	172
1481	VCP	589866	10	134.56		Rehabilitation	8/7/2018	133.9
1481	VCP	2025157	10	123		Rehabilitation	8/7/2018	123.7
1481	VCP	550059	12	153.47		Rehabilitation	7/19/2018	151.7
1481	VCP	550113	12	114.16		Rehabilitation	7/19/2018	114.2
1481	VCP	550429	12	200		Rehabilitation	12/5/2018	197.3
1481	RCP	590129	15	83		Rehabilitation	7/5/2018	82.8
1481	VCP	590519	15	81.59		Rehabilitation	7/5/2018	80.1
1481	VCP	590602	15	223		Rehabilitation	1/24/2019	219
1481	VCP	590691	15	241.5		Rehabilitation	1/23/2019	240.4
1481	RCP	546637	18	225		Rehabilitation	1/22/2019	225.4
1481	RCP	589050	21	86.8		Rehabilitation	5/29/2019	80.9
1482	VCP	138762	6	256		Rehabilitation	11/16/2018	253.1
1482	VCP	150721	6	158		Rehabilitation	9/5/2018	165.2
1482	VCP	150729	6	158.04		Rehabilitation	9/5/2018	163.8
1482	VCP	1001034	6	61		Rehabilitation	9/17/2018	63.2
1482	VCP	1001036	6	104.12		Rehabilitation	9/17/2018	104.8
1482	VCP	138526	8	155.68		Rehabilitation	11/27/2018	166.4

1482	VCP	140779	8	300.33		Rehabilitation	4/18/2019	298.6
1482	VCP	154704	8	148.35		Rehabilitation	9/6/2018	140.7
1482	VCP	155999	8	178.82		Rehabilitation	4/16/2019	179.7
1482	VCP	156000	8	113		Rehabilitation	4/17/2019	111.1
1482	VCP	156002	8	131.94		Rehabilitation	4/17/2019	131.7
1482	VCP	156012	8	110		Rehabilitation	4/16/2019	106.8
1482	VCP	156377	8	153.28		Rehabilitation	9/20/2018	153
1482	VCP	156534	8	143		Rehabilitation	9/18/2018	141.7
1482	VCP	156536	8	91		Rehabilitation	9/18/2018	87.9
1482	VCP	166419	8	234.8		Rehabilitation	10/18/2018	236.5
1482	VCP	167370	8	231.86		Rehabilitation	10/25/2018	234.1
1482	VCP	168033	8	115		Rehabilitation	11/30/2018	111.2
1482	VCP	170106	8	151.79		Rehabilitation	10/25/2018	146.8
1482	VCP	174709	8	122		Rehabilitation	11/30/2018	130.3
1482	VCP	156030	10	149.84		Rehabilitation	4/11/2019	150.4
1482	VCP	156035	10	145.85		Rehabilitation	4/11/2019	143.7
1482	VCP	156042	10	196.41		Rehabilitation	4/10/2019	196.3
1482	VCP	156051	10	147.39		Rehabilitation	4/10/2019	145.5
1482	VCP	156060	10	104.9		Rehabilitation	4/5/2019	193.6
1482	VCP	156076	10	285		Rehabilitation	4/4/2019	280.8
1482	VCP	156092	10	204.6		Rehabilitation	4/3/2019	117.7
1484	VCP	632027	8	105.86		Rehabilitation	7/24/2018	101.1
1484	VCP	3002872	8	94		Rehabilitation	7/25/2018	89.2
1486	TCP	320601	6	99.82		Rehabilitation	10/24/2018	99
1486	TCP	320614	6	122.19		Rehabilitation	7/10/2018	119
1486	TCP	320621	6	116.9		Rehabilitation	7/10/2018	113
1486	TCP	320656	6	150.07		Rehabilitation	9/6/2018	147.4
1486	TCP	320676	6	58.21		Rehabilitation	9/6/2018	55.2
1487	VCP	437328	8	89		Rehabilitation	9/4/2018	92.4
1487	VCP	437452	8	12		Rehabilitation	9/26/2018	12.3

1487	VCP	437590	8	104.08		Rehabilitation	8/31/2018	104.5
1487	VCP	437649	8	113.53		Rehabilitation	8/31/2018	104.2
1487	VCP	437654	8	10		Rehabilitation	8/31/2018	9.3
1487	VCP	437678	8	145		Rehabilitation	8/15/2018	143.2
1487	VCP	437707	8	220		Rehabilitation	8/14/2018	213.8
1487	VCP	437782	8	276		Rehabilitation	8/16/2018	275.3
1487	VCP	437805	8	251.07		Rehabilitation	12/10/2018	251.8
1487	VCP	438022	8	180.8		Rehabilitation	8/21/2018	182
1487	VCP	438045	8	195.5		Rehabilitation	8/21/2018	189.5
1487	VCP	438075	8	195		Rehabilitation	8/20/2018	186.2
1487	VCP	438326	8	265		Rehabilitation	8/8/2018	260.4
1487	VCP	438386	8	170.9		Rehabilitation	8/9/2018	170.6
1487	VCP	437650	8	180.7		Rehabilitation	8/15/2018	179.8
1487	VCP	472638	8	197.69		Rehabilitation	8/10/2018	198.5
1487	VCP	706354	8	245		Rehabilitation	11/29/2018	192.1
1487	VCP	706363	8	264		Rehabilitation	8/30/2018	260.2
1487	VCP	438462	21	186.85		Rehabilitation	6/6/2019	187
1487	VCP	437953	21	134.59		Rehabilitation	6/6/2019	137.2
1488	VCP	490539	8	246.05		Rehabilitation	2/7/2019	165.6
1488	VCP	490455	10	64.5		Rehabilitation	2/8/2019	55.4
1488	VCP	490486	10	129		Rehabilitation	2/8/2019	125.9
1489	VCP	80911	8	130		Rehabilitation	2/19/2019	126.5
1489	VCP	80926	8	216		Rehabilitation	2/5/2019	212.2
1489	VCP	80940	8	90		Rehabilitation	2/5/2019	90.4
1489	VCP	80943	8	223.8		Rehabilitation	2/19/2019	222.2
1489	VCP	80953	8	142		Rehabilitation	2/4/2019	141.4
1489	VCP	80954	8	127		Rehabilitation	2/6/2019	126.1
1489	VCP	80959	8	147.49		Rehabilitation	2/4/2019	141.5
1489	VCP	80971	8	169.72		Rehabilitation	2/20/2019	163.9
1489	VCP	80975	8	126.63		Rehabilitation	2/14/2019	125.7

1489	VCP	80976	8	152		Rehabilitation	2/6/2019	151.4
1489	VCP	80980	8	181		Rehabilitation	1/29/2019	179
1489	VCP	80981	8	62		Rehabilitation	2/13/2019	65.3
1489	VCP	80983	8	219.73		Rehabilitation	2/13/2019	214.8
1489	VCP	80990	8	126.65		Rehabilitation	2/14/2019	129.3
1489	VCP	80999	8	175		Rehabilitation	2/6/2019	174.4
1489	VCP	81005	8	110		Rehabilitation	2/20/2019	110.3
1489	VCP	81018	8	114.03		Rehabilitation	2/14/2019	117
1489	VCP	81026	8	120		Rehabilitation	5/24/2019	122.8
1489	VCP	81027	8	187.8		Rehabilitation	5/24/2019	186.9
1489	VCP	81042	8	137		Rehabilitation	1/29/2019	134.1
1489	VCP	81044	8	115.58		Rehabilitation	5/21/2019	120.5
1489	VCP	81046	8	175.35		Rehabilitation	1/17/2019	170.6
1489	VCP	81064	8	152.86		Rehabilitation	3/19/2019	150.5
1489	VCP	86297	8	153.32		Rehabilitation	1/30/2019	153.1
1489	VCP	86310	8	217.72		Rehabilitation	5/21/2019	212.5
1489	VCP	86351	8	126		Rehabilitation	1/10/2019	121.5
1489	VCP	86354	8	340.91		Rehabilitation	1/17/2019	334.8
1489	VCP	86358	8	220		Rehabilitation	1/30/2019	219.5
1489	VCP	86370	8	139.38		Rehabilitation	5/17/2019	139.4
1489	VCP	86379	8	78.75		Rehabilitation	1/31/2019	79.4
1489	VCP	86394	8	151.01		Rehabilitation	1/16/2019	150.7
1489	VCP	86411	8	277.21		Rehabilitation	2/1/2019	276.3
1489	VCP	86429	8	321.33		Rehabilitation	5/16/2019	320.2
1489	VCP	86435	8	144		Rehabilitation	2/12/2019	147.8
1489	VCP	86441	8	247.15		Rehabilitation	1/16/2019	256.6
1489	VCP	86445	8	73.76		Rehabilitation	2/12/2019	47.2
1489	VCP	86453	8	178.62		Rehabilitation	1/15/2019	172.1
1489	VCP	86462	8	34.06		Rehabilitation	2/12/2019	32.8
1489	VCP	86464	8	157.5		Rehabilitation	2/12/2019	164.5

1489	VCP	86486	8	216.29		Rehabilitation	1/7/2019	212.1
1489	VCP	86500	8	175.48		Rehabilitation	1/7/2019	170.3
1489	VCP	86518	8	200.4		Rehabilitation	1/8/2019	200.7
1489	VCP	86529	8	174.09		Rehabilitation	1/8/2019	170.5
1489	VCP	86532	8	88.33		Rehabilitation	1/9/2019	83.5
1489	VCP	86535	8	71.82		Rehabilitation	1/9/2019	68.8
1489	VCP	86537	8	134.21		Rehabilitation	1/9/2019	132.3
1489	VCP	3006479	8	255.94		Rehabilitation	1/31/2019	264.8
1490	VCP	1375	8	55.05		Rehabilitation	9/28/2018	51.7
1490	VCP	1389	8	93.64		Rehabilitation	9/28/2018	88.7
1490	VCP	1393	8	105.87		Rehabilitation	9/28/2018	103.4
1490	VCP	1424	8	220.85		Rehabilitation	9/27/2018	221.7
1490	VCP	1482	8	66.03		Rehabilitation	9/27/2018	62.6
1490	VCP	1499	8	140		Rehabilitation	10/1/2018	136.6
1490	VCP	1551	8	187.91		Rehabilitation	10/1/2018	183.6
1490	VCP	1637	8	96		Rehabilitation	10/1/2018	93
1490	VCP	4383	8	119.97		Rehabilitation	9/21/2018	119.1
1490	VCP	4522	8	123		Rehabilitation	10/4/2018	120.3
1490	VCP	10263	8	188.09		Rehabilitation	9/20/2018	184.1
1490	VCP	3006452	8	142		Rehabilitation	10/4/2018	139.1
1490	VCP	4491	10	150		Rehabilitation	10/3/2018	148.7
1490	VCP	4524	10	105.7		Rehabilitation	10/3/2018	100.7
1490	VCP	4563	10	73		Rehabilitation	10/2/2018	67.3
1490	VCP	3004178	10	113		Rehabilitation	10/2/2018	109.6
1491	VCP	138539	6	112.08		Rehabilitation	9/12/2018	109.5
1491	VCP	138586	6	142.5		Rehabilitation	9/12/2018	138.9
1491	VCP	138648	6	132.03		Rehabilitation	8/15/2018	128.6
1491	VCP	138755	6	221.11		Rehabilitation	8/15/2018	219.6
1491	VCP	138483	8	99.87		Rehabilitation	8/16/2018	94.9
1491	VCP	138491	8	136.38		Rehabilitation	8/21/2018	133.6

1491	VCP	138508	8	20		Rehabilitation	8/21/2018	16
1491	VCP	138499	8	30		Rehabilitation	8/16/2018	28
1491	VCP	146338	8	98		Rehabilitation	9/7/2018	93.2
1491	VCP	146353	8	80.58		Rehabilitation	9/7/2018	77.1
1491	VCP	146380	8	88.43		Rehabilitation	9/7/2018	84.9
1491	VCP	152209	8	227.6		Rehabilitation	8/22/2018	226.7
1491	VCP	152328	8	231.77		Rehabilitation	9/25/2018	228.1
1491	VCP	152410	8	114		Rehabilitation	9/25/2018	112.1
1491	VCP	152431	8	181		Rehabilitation	9/26/2018	175
1491	VCP	156404	8	130		Rehabilitation	10/9/2018	128.6
1491	VCP	166240	8	124.5		Rehabilitation	8/28/2018	114.7
1491	VCP	167479	8	220.93		Rehabilitation	8/29/2018	216.8
1491	VCP	168713	10	237.76		Rehabilitation	9/21/2018	231.1
1491	VCP	138819	10	96.62		Rehabilitation	9/24/2018	96.9
1491	VCP	138873	10	39		Rehabilitation	9/24/2018	38.8
1491	VCP	160991	12	176.83		Rehabilitation	10/29/2018	173.4
1492	VCP	278043	8	178.16		Rehabilitation	4/8/2019	185.8
1492	VCP	278142	8	208.3		Rehabilitation	4/8/2019	204.9
1492	VCP	278274	8	113.7		Rehabilitation	4/8/2019	116.9
1493	VCP	4971	8	165.05		Rehabilitation	3/28/2019	160.5
1493	VCP	5042	8	245		Rehabilitation	1/17/2019	238
1493	VCP	5044	8	157.85		Rehabilitation	4/1/2019	153.7
1493	VCP	5127	8	300		Rehabilitation	1/25/2019	295.1
1493	VCP	5161	8	53		Rehabilitation	1/17/2019	50
1493	VCP	5164	8	308.09		Rehabilitation	1/18/2019	303.4
1493	VCP	5314	8	133.89		Rehabilitation	3/18/2019	129
1493	VCP	5393	8	136		Rehabilitation	4/1/2019	132.5
1493	VCP	5401	8	300		Rehabilitation	1/18/2019	295.5
1493	VCP	5412	8	130		Rehabilitation	4/4/2019	125.3
1493	VCP	5473	8	152.85		Rehabilitation	4/1/2019	148.9

1493	VCP	5525	8	262		Rehabilitation	4/16/2019	257
1493	VCP	5656	8	59.37		Rehabilitation	1/24/2019	57.4
1493	VCP	5722	8	124.59		Rehabilitation	3/21/2019	120.2
1493	VCP	5765	8	140		Rehabilitation	1/24/2019	134
1493	VCP	5797	8	233.35		Rehabilitation	1/22/2019	225.1
1493	VCP	10500	8	14.19		Rehabilitation	3/27/2019	11.8
1493	VCP	10503	8	43.69		Rehabilitation	3/27/2019	39.6
1493	VCP	10504	8	78.37		Rehabilitation	3/27/2019	74.1
1493	VCP	10552	8	113.27		Rehabilitation	4/23/2019	109.8
1493	VCP	23187	8	200.7		Rehabilitation	3/18/2019	198.5
1493	VCP	5671	10	279		Rehabilitation	1/28/2019	275.4
1493	VCP	5862	10	268.16		Rehabilitation	1/25/2019	263.7
1493	VCP	6104	10	43.22		Rehabilitation	1/25/2019	39.3
1493	VCP	4966	12	176.66		Rehabilitation	4/10/2019	159
1493	VCP	4982	12	149.45		Rehabilitation	3/19/2019	145.6
1493	VCP	5004	12	250		Rehabilitation	4/8/2019	245.1
1493	VCP	5041	12	217.36		Rehabilitation	3/20/2019	213.7
1493	VCP	5125	12	214.78		Rehabilitation	2/26/2019	209
1493	VCP	5249	12	300		Rehabilitation	2/1/2019	290.9
1493	VCP	5459	12	136		Rehabilitation	2/1/2019	129.1
1493	VCP	5587	12	117		Rehabilitation	2/1/2019	117
1494	VCP	5880	8	213		Rehabilitation	6/14/2019	214
1494	VCP	6024	8	128		Rehabilitation	6/14/2019	128.2
1494	VCP	6110	8	197		Rehabilitation	6/14/2019	197.1
1494	VCP	6133	8	239.16		Rehabilitation	5/9/2019	237.1
1494	VCP	6199	8	153		Rehabilitation	5/10/2019	143
1494	VCP	6296	8	132.5		Rehabilitation	6/14/2019	132.6
1494	VCP	6443	8	205.64		Rehabilitation	5/8/2019	205.7
1494	VCP	6579	8	114.97		Rehabilitation	5/8/2019	114
1494	VCP	6600	8	65		Rehabilitation	4/30/2019	62.3

1494	VCP	6668	8	40.3		Rehabilitation	5/8/2019	41.2
1494	VCP	10574	8	140		Rehabilitation	6/4/2019	140.1
1494	VCP	10591	8	133.81		Rehabilitation	6/4/2019	131.3
1494	VCP	10614	8	181		Rehabilitation	6/12/2019	180.1
1494	VCP	10617	8	134.68		Rehabilitation	6/4/2019	135.6
1494	VCP	10625	8	54		Rehabilitation	6/7/2019	53.8
1494	VCP	10630	8	116.2		Rehabilitation	6/7/2019	114.6
1494	VCP	10632	8	100.79		Rehabilitation	6/7/2019	102.1
1494	VCP	10642	8	100.79		Rehabilitation	6/7/2019	101.7
1494	VCP	10646	8	183.88		Rehabilitation	6/10/2019	185.2
1494	VCP	10657	8	106.12		Rehabilitation	6/12/2019	107.4
1494	VCP	10663	8	127.53		Rehabilitation	6/10/2019	126.3
1494	VCP	10671	8	80.41		Rehabilitation	6/12/2019	79.5
1494	VCP	10673	8	68		Rehabilitation	5/2/2019	66.9
1494	VCP	10679	8	133.4		Rehabilitation	5/2/2019	131.5
1494	VCP	10690	8	162		Rehabilitation	5/3/2019	160.9
1494	VCP	10700	8	54.32		Rehabilitation	5/2/2019	48
1494	VCP	10704	8	136.5		Rehabilitation	5/1/2019	140.1
1494	VCP	10707	8	204		Rehabilitation	4/30/2019	200.3
1494	VCP	10714	8	136.5		Rehabilitation	5/1/2019	138.4
1494	VCP	10731	8	193		Rehabilitation	4/29/2019	197
1494	VCP	10757	8	94		Rehabilitation	4/29/2019	95.2
1494	VCP	13440	8	145		Rehabilitation	4/29/2019	145
1494	VCP	13699	8	162.97		Rehabilitation	3/8/2019	163.1
1494	VCP	13732	8	98.72		Rehabilitation	4/23/2019	99.4
1494	VCP	13750	8	104.53		Rehabilitation	4/23/2019	104.6
1494	VCP	13827	8	98.65		Rehabilitation	4/25/2019	97
1494	VCP	13832	8	180		Rehabilitation	4/25/2019	180
1494	VCP	13839	8	112.63		Rehabilitation	4/25/2019	113.2
1494	VCP	13888	8	265.55		Rehabilitation	4/8/2019	264

1494	VCP	13892	8	275		Rehabilitation	4/8/2019	274.4
1494	VCP	13916	8	166.2		Rehabilitation	2/28/2019	168.8
1494	VCP	13945	8	78.47		Rehabilitation	2/28/2019	67.7
1494	VCP	13951	8	136.56		Rehabilitation	2/26/2019	135.5
1494	VCP	13963	8	106.74		Rehabilitation	2/27/2019	105.4
1494	VCP	13968	8	114.29		Rehabilitation	2/27/2019	113.3
1494	VCP	13973	8	106.74		Rehabilitation	2/27/2019	106
1494	VCP	13987	8	50.92		Rehabilitation	2/28/2019	51
1494	VCP	13988	8	44.38		Rehabilitation	2/26/2019	45.6
1494	VCP	15560	8	300		Rehabilitation	3/14/2019	299.7
1494	VCP	15602	8	290		Rehabilitation	3/13/2019	287
1494	VCP	15644	8	227.42		Rehabilitation	3/12/2019	224.6
1494	VCP	15657	8	117.94		Rehabilitation	3/8/2019	115.8
1494	VCP	15663	8	255		Rehabilitation	3/7/2019	254.2
1494	VCP	15691	8	69.6		Rehabilitation	3/7/2019	71.1
1494	VCP	15696	8	114		Rehabilitation	2/26/2019	109
1475	RCP	240495	48	250		Rehabilitation	3/22/2019	254.4
1475	RCP	2002358	48	62.07		Rehabilitation	5/23/2019	62.8
1493	VCP	5856	8	125.59		Rehabilitation	3/21/2019	121.5
1489	VCP	86328	8	188.96		Rehabilitation	5/17/2019	189
1487	VCP	437932	8	50.67		Part Liner	10/1/2018	4
1481	VCP	589167	6	50		Point Repair	9/4/2018	4
1484	VCP	631661	8	232.68		Point Repair	9/11/2018	168.6
1484	VCP	642074	8	215.4		Point Repair	7/18/2018	4
1484	VCP	642185	8	217.5		Point Repair	7/18/2018	5
1484	VCP	648561	8	78.8		Point Repair	7/18/2018	5
1484	VCP	644605	10	87		Point Repair	7/26/2018	83.2
1484	VCP	648797	15	159.16		Point Repair	10/8/2018	153.4
1487	VCP	438385	6	110		Point Repair	9/27/2018	5
1487	VCP	471611	8	188.3		Point Repair	8/28/2018	4

1496	VCP	633298	12	84		Point Repair	1/14/2019	87.3
1496	VCP	633300	12	210		Point Repair	1/14/2019	214.3
1471	VCP	462320	6	250		Point Repair	8/22/2018	253
1482	VCP	138915	6	245		Point Repair	10/17/2018	241.6
1482	VCP	156509	6	124.51		Point Repair	9/17/2018	120.5
1482	VCP	156553	6	184.8		Point Repair	10/22/2018	183.5
1482	VCP	162147	6	194.81		Point Repair	4/12/2019	193.4
1482	VCP	170602	6	121.04		Point Repair	10/22/2018	121.5
1482	VCP	161062	8	151.96		Point Repair	10/10/2018	153.3
1482	VCP	161063	8	121.2		Point Repair	10/10/2018	124.1
1482	VCP	161193	8	97		Point Repair	11/20/2018	94.5
1482	VCP	162009	8	215		Point Repair	12/4/2018	211.3
1482	VCP	168049	8	42		Point Repair	11/30/2018	38
1484	VCP	631372	6	250		Point Repair	7/17/2018	242.1
1484	VCP	649020	6	100		Point Repair	7/19/2018	94.4
1484	VCP	611478	8	250		Point Repair	7/13/2018	245.9
1484	VCP	631607	8	217.36		Point Repair	9/11/2018	214.1
1484	VCP	632970	8	216		Point Repair	7/20/2018	209.3
1486	TCP	320609	6	69.26		Point Repair	10/24/2018	67
1486	TCP	320660	6	63.45		Point Repair	10/30/2018	59
1486	TCP	320678	6	69.6		Point Repair	9/5/2018	66.2
1486	TCP	3013099	6	95		Point Repair	9/5/2018	99.7
1486	TCP	364020	8	256		Point Repair	9/27/2018	248.8
1486	UNK	3013435	8	350		Point Repair	10/31/2018	362.7
1487	VCP	437459	8	113.53		Point Repair	9/26/2018	110.6
1487	VCP	437553	8	260		Point Repair	9/11/2018	254.4
1487	VCP	437852	8	256.42		Point Repair	12/6/2018	251.2
1487	VCP	706324	8	200.53		Point Repair	11/29/2018	198.8
1488	VCP	489959	8	250		Point Repair	1/3/2019	251
1488	VCP	490738	8	122		Point Repair	1/4/2019	122

1488	VCP	4005372	8	274		Point Repair	1/25/2019	272.2
1490	VCP	87647	8	92		Point Repair	10/3/2018	86.5
1491	VCP	152427	8	298		Point Repair	9/26/2018	291.5
1491	VCP	162055	8	100		Point Repair	10/5/2018	96
1454	TCP	314624	8	203.6		Point Repair	8/1/2018	201.8
1454	TCP	314934	200			Point Repair	8/2/2018	196.1
1454	TCP	306988	12	284		Point Repair	7/31/2018	280.4
1479	VCP	4014836	12	178		Point Repair	7/11/2018	173.6
1481	VCP	594496	6	224		Point Repair	12/11/2018	224.3
1481	VCP	588355	8	140		Point Repair	9/25/2018	141
1481	VCP	589823	8	170		Point Repair	7/13/2018	170.3
1481	VCP	590601	8	90		Point Repair	9/14/2018	91.9
1481	VCP	594052	8	354.05		Point Repair	7/6/2018	351.9
1481	VCP	3010514	8	46.27		Point Repair	8/6/2018	44
1481	VCP	550132	12	120		Point Repair	7/19/2018	120.8
1481	VCP	590490	12	157.8		Point Repair	7/20/2018	156.6
1483	VCP	4023942	6	157.47		Replace	10/18/2018	155.3
1487	VCP	437374	8	10		REPLACE	8/27/2018	6

Attachment B: Problem Laterals Addressed in Year Nine

Lateral Sewer ID	Corrective Action	Activity Date	Activity Feet
277958	Flushing	2/14/19	58.00
277958	Flushing	3/18/19	38.86
383650	Flushing	5/26/19	3.50
383762	Flushing	5/29/19	39.00
384182	Flushing	5/29/19	20.00
384609	Flushing	7/28/18	2.00
384638	Flushing	8/1/18	2.00
690108	Flushing	6/11/19	19.50
3005364	Flushing	6/25/19	24.00
4039275	Flushing	6/26/19	26.50
11620	Mechanical Cleaning	1/29/19	16.52
61826	Mechanical Cleaning	1/29/19	15.22
257315	Mechanical Cleaning	2/11/19	40.99
600643	Mechanical Cleaning	9/11/18	7.00
646672	Mechanical Cleaning	5/29/19	24.00
648874	Mechanical Cleaning	5/30/19	3.50
705207	Mechanical Cleaning	6/12/19	20.00
3002654	Mechanical Cleaning	6/23/19	22.00
3002988	Mechanical Cleaning	6/24/19	104.50
1982	Repair	1/28/19	71.19
1982	Repair	1/29/19	322.00
107143	Repair	1/29/19	1.00
287963	Repair	5/9/19	30.00
287963	Repair	5/9/19	32.80
314095	Repair	5/20/19	12.00
324111	Repair	5/20/19	8.00

364651	Repair	5/20/19	2.00
368463	Repair	5/24/19	2.00
403443	Repair	7/28/18	7.00
477999	Repair	11/8/18	3.50
609975	Repair	9/17/18	31.00
611086	Repair	9/14/18	1.00
673503	Repair	6/6/19	4.00
1005208	Repair	6/16/19	15.60
2030599	Repair	6/17/19	1.00
2031092	Repair	6/17/19	1.00
2041154	Repair	6/23/19	6.50
3004682	Repair	6/24/19	5.00
4038380	Repair	6/25/19	3.50
142116	Visual Inspection	1/29/19	219.00
185291	Visual Inspection	1/29/19	19.65
295145	Visual Inspection	5/20/19	3.00
368600	Visual Inspection	5/24/19	10.00
376288	Visual Inspection	5/26/19	63.90
396323	Visual Inspection	8/3/18	1.00
419659	Visual Inspection	10/8/18	4.00
436655	Visual Inspection	10/17/18	3.50
453291	Visual Inspection	11/8/18	8.00
510537	Visual Inspection	11/29/18	22.00
541857	Visual Inspection	8/13/18	1.00
552535	Visual Inspection	8/31/18	1.00
628477	Visual Inspection	9/27/18	15.60
628477	Visual Inspection	3/1/19	5.00
642146	Visual Inspection	4/12/19	12.00
648874	Visual Inspection	6/4/19	26.50
675685	Visual Inspection	6/10/19	12.35

689785	Visual Inspection	6/11/19	20.00
690108	Visual Inspection	6/12/19	4.50
711918	Visual Inspection	6/12/19	48.00
4067515	Visual Inspection	6/26/19	31.00
4067518	Visual Inspection	6/27/19	12.35
4067521	Visual Inspection	6/27/19	20.00
4067524	Visual Inspection	6/28/19	19.50
4078137	Visual Inspection	6/28/19	4.50
4078140	Visual Inspection	6/28/19	20.00